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Original Articles.

THE VALUE OF BASAL METABOLISM DETERMINATIONS IN THE DIAGNOSIS AND TREATMENT OF HYPERTHYROIDISM.[*]

By Henry F. Stoll, M.D., Hartford, Conn.

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At a time when so many voices are heard decrying the prominence given today to laboratory diagnoses and the seeming decadence of careful clinical observation, one must examine with great care each newly advocated diagnostic method. One may postulate three requisites that should be fulfilled before a new procedure is accepted: (1) Is there need of such a test? (2) Is the proposed test trustworthy? (3) Is it sufficiently simple of performance to make it generally available? Applying these criteria to the subject under discussion, is a test for the detection of thyroid dysfunction needed? For years physicians the world over have recognized hyperthyroidism by its clinical manifestations alone, and a fourth-year medical school student can make a diagnosis of thyrotoxicosis in the patient with protruding eyes, tremor, rapid pulse and struma. Why employ a test requiring considerable time and a very careful technique? This question is very pertinent when a man of Crile's standing and large experience with hyperthyroid cases finds his clinical judgment the best guide.[1] But do most physicians possess such diagnostic acumen? Plummer[2] says: "The phenomena of mild exophthalmic goitre are so much like the psychoneurotic manifestations due to lack of assurance, that the thyroid is frequently resected for the latter condition." A well-known internist, after studying a group of so-called "neuro-circulatory asthenia" patients in the army, was convinced that the condition was due to over-functioning of the thyroid gland. The basal metabolism in a similar group, however, was subsequently found to be normal, thus excluding hyperthyroidism.

It is the border-line case, not the classical picture that puzzles us. Particularly difficult is it to decide whether the symptoms in a patient with slight enlargement of the thyroid are due to "nerves" or to increased secretion of the thyroid. Such a case was Mrs. S., aged 39, who was referred to me in June, 1921, to determine whether she had hyperthyroidism. Nine months previously she first noticed that the thyroid was slightly enlarged. One or two friends also commented on this and she immediately began to worry. Her sister noticed a variation in size at different times. Mrs. S. had always been of a nervous temperament and perspired rather easily. There had been no loss of weight recently; in fact, she had gained slightly. Of late there had been slight insomnia because she feared she was developing a goitre. The patient was a large, well-nourished woman, with moderate flushing of the skin and slight general enlargement of the thyroid. Pulse 108, no tremor, exophthalmos, thrill or bruit. I felt that the nervousness was due more to worry over the thyroid enlargement than to the overfunctioning of the gland. I saw her occasionally through the summer and fall; the nervousness slightly increased, she began to tire easily and her appetite was not as good. Her pulse was about 90 most of the time. Early in October the basal metabolism was plus 26 per cent. (Chart 1.) Radium was not applied by Dr. Heublein until nearly two months later. A slight systemic reaction followed and some increased swelling of the gland. Three weeks later she was no better and the basal metabolism at this time gave practically the same result, plus 25 per cent. One month later, at which time there was some clinical improvement manifest, it had fallen to plus 20 per cent. and six weeks later, at which time the patient was better "in all ways," it was plus 16 per cent. Though the size of the gland had not materially changed, she was much stronger, breathed more easily, slept better, was much less nervous and perspired less easily.

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[*] Read before the One Hundred Thirtieth Annual Meeting of the Hartford County Medical Society.

It is often difficult in the presence of an adenoma that has persisted for years, to determine whether it plays any part in the symptoms. At the Mayo Clinic it was found that the adenomatous goitre did not cause toxic symptoms till the latter half of the third decade and on an average seventeen and one-half years after the appearance of the goitre.

Mrs. C., a woman of 54, was first seen Nov. 3rd, 1921. She had had a large adenoma of the thyroid for a number of years. Several months previously she was examined by an internist of ability, who did not believe there was any relationship between her nervousness and weakness and the thyroid. Very soon thereafter she was seen by a surgeon who has had considerable experience with hyperthyroid cases. He not only thought she was suffering from a toxic adenoma, but he considered her too toxic even for ligation, and advised radium. This was applied in August, and again in October, 1921, with some clinical improvement, but no basal metabolism estimation was made until November 3rd. At this time, notwithstanding two radium treatments, the basal metabolism was plus 35 per cent. Following the radium she improved considerably, but she still suffered from palpitation, nervousness, weakness and a rapid pulse, and was much below her normal weight. Six weeks later (Dec. 21st), there was little change, either in her general condition or her metabolic rate, which was plus 22 per cent. This case illustrates that a perfectly well behaved adenoma may, without apparent provocation, suddenly begin to flood the system with an excess of thyroxin. If at the inception of symptoms the basal metabolism be ascertained, treatment can be instituted before the irreparable damage present in the case just recounted takes place. Like tuberculosis, little can be accomplished when the diagnosis can be made by the man on the street.

Mrs. W., a widow, aged 54, complained of dyspnoea and palpitation. She was referred to me because her physician thought that possibly she might have hyperthyroidism as she had a moderate enlargement of the thyroid and a slightly elevated blood pressure. Her basal metabolism, however, was normal, suggesting that possibly digitalis rather than radiation of her thyroid was indicated. Even if the basal metabolism had been moderately increased in this case it would have been impossible on this evidence to incriminate the thyroid, as cardiorenal patients with dyspnoea often show an increased rate.

From the cases already cited it is apparent that the estimation of the activity of the thyroid by clinical means alone is frequently erroneous. Even when the clinical diagnosis is unquestioned, the problem is but half solved. How toxic is the patient? Shall lobectomy be performed or would a preliminary ligation or, perhaps, x-ray or radium be safer? These questions the surgeon familiar with such cases can usually answer. All appreciate that rapid loss of weight, a rapid fibrillating heart and diarrhoea indicate a severe toxaemia; but there are border-line cases where even the man of large experience is sometimes sorely puzzled. If the degree of toxaemia is underestimated, a fatality may ensue. As an aid in estimating the degree of toxicity basal metabolism determinations have proven of a great deal of help. Pemberton[3] states that "the degree of loss of strength and weight, and the height of the basal metabolic rate, taken separately, are only relative criteria of the operability of patients with exophthalmic goitre; but taken together, and in relation to the phase of the disease, they become the basis on which an opinion is formed." Leahy[4] believes that "basal metabolism as a diagnostic measure, although subject to error in estimation and interpretation, is probably more constantly reliable than many of our other laboratory measures." The clinical picture should always be studied in conjunction with the basal metabolic rate as there may be certain symptoms that stamp the case as a poor risk, though the metabolic rate may suggest only a mild toxaemia. In such a case, to disregard the symptoms and do a lobectomy because the metabolic rate was below a certain figure would be to court disaster. The basal metabolic rate alone, therefore, will not guarantee the safety of any surgical procedure. Leahy feels, however, that when there is no clinical evidence of severe toxicity, and no complication (heart and kidney), partial lobectomy, unpreceded by ligation, may be undertaken when the basal metabolism is not over plus 35 per cent. Metabolic rates between plus 35 per cent. and plus 50 per cent. require judgment, based upon a large experience, to decide between ligation and partial lobectomy.

With rates above 50 per cent. Leahy considers primary ligation safest. When the B. M. is over plus 75, extreme caution in any surgical procedure is demanded. A progressively increasing B. M. rate is indicative of a so-called crisis and is a contraindication to operation. In deciding as to the operability of toxic goitres, at the Mayo Clinic, the greatest weight is attached to three things, viz., the loss of strength, loss of weight, and the metabolic rate. The average increase in the metabolic rate in cases suitable for a primary lobectomy was plus 36; of the groups requiring a primary ligation the average rate was plus 51 per cent. Those patients who, for some reason or other, were deemed not suited for immediate operation, and in whom two ligations and a rest period preceded lobectomy, had an average B. M. of plus 63 per cent. In estimating the degree of loss of strength, the use of the coefficients, 1, 2, 3, and 4, has been suggested. For reasons hereinafter explained, I would suggest 10, 20, 30, and 40 be used to indicate the loss of strength. In expressing loss of strength numerically, it is impossible to eliminate the element of personal equation, yet this can be minimized to a large degree if it be assumed that loss of strength 40 signifies confinement to bed; loss of strength 30, ability to be up though not able to work, and with great loss of strength in the quadriceps muscles manifest especially in stair-climbing; loss of strength 20, the ability to work, but with great exhaustion; loss of strength 10, slight but definite increase in fatigability. In the majority of cases the degree of the loss of strength, loss of weight, and the increase in metabolic rate roughly agree. When this is not the case the deviating factor is often offset by one or both of the others. For example, patients are occasionally seen who seem more toxic than the B. M. would indicate. In such instances the loss of strength and loss of weight are usually extreme.

If in some way it were possible to obtain a numerical expression of the combined loss of weight, loss of strength, and the increased metabolic rate, the result might be more accurate than the B. M. rate alone. This might be referred to as the total toxicity. Applying this to Pemberton's averages (Chart 2), and moving his decimal point one place to the right, under loss of strength, to comply with the plan suggested above, we then add the loss of strength, loss of weight, and increased metabolic rates together. It is then apparent that primary resection was done when the total toxicity averaged 64; that ligation was the operation of choice when the total toxicity rose to 80, but that when it exceeded 100 two ligations and a rest period preceded removal of the gland. Theoretically, such a formula might be of value unless the numerical expression of loss of weight would prove too variable. It at least would tend to focus more attention on the importance of loss of weight and strength in determining operability.

Two cases, seen recently, demonstrate that the metabolic rate may give a truer idea of the gravity of the case than the clinical picture. Mrs. G., aged 39, first noticed enlargement of the thyroid 14 years ago, during her first pregnancy at about the sixth month. The swelling subsided after confinement to a considerable degree. This was repeated with each of the three succeeding pregnancies. Since the last there has been a well-marked adenoma, and she had never been quite as well, though toxic symptoms had been present only six months. During the nine days patient was awaiting operation, the pulse was rarely over 90 and usually between 80 and 85. The B. M. was plus 64 per cent.; as this was higher than her general picture suggested, and as the results of ligation in toxic adenoma are disappointing, lobectomy was undertaken, but the patient died before its completion. Had we determined her "total toxicity" (64 plus 20 plus 25), we would have realized that she was in the group in which any operation is extremely hazardous.

Mrs. Z., aged 40, had been in her usual health till 8 weeks before, when vomiting began. For the same period she had suffered from a frontal headache. She had had marked trembling of the whole body for three weeks, especially when nervous. For six years she had had a goitre. The patient was very nervous and excited. There were no eye signs. The face appeared rather puffy and "myxedematous." The right lobe of the thyroid was about the size of "turkey's egg," the isthmus and left lobe were apparently not enlarged. There was marked tremor of the hands. Unlike the preceding case, she was very excitable and ran an erratic pulse. It was not possible to ascertain the loss of weight nor to estimate the loss of strength. The B. M. done by Dr. Whittles and Miss Flynn, October 24, 1921, was plus 57 per cent. Approximately two weeks later it was repeated by Dr. Wentworth and again found plus 57 per cent. Ten days later a rather extensive resection was performed, following which the patient experienced a severe reaction from which she died the next day.

The claim has been made that the pulse rate gives as accurate a picture of the degree of toxicity as the basal metabolism. The charts of these two cases demonstrate that this is not always true. In fact, these cases were quite different clinically, though in each the basal metabolic rate was considerably higher than that obtained in cases generally considered as suitable for primary lobectomy. (Chart 3.)

The toxic patient, in whom a primary ligation is done, will in all probability need further surgery; but when? Shall we tell him to return "in a couple of months," or take the basal metabolism every two weeks, and advise the next operation when the fall in rate ceases?

Is the test referred to as the "Basal Metabolism test" trustworthy? It is only a short time since we were told that excessive thyroid secretion could be determined by the injection of epinephrin and by study of the blood sugar curve following the ingestion of a certain amount of glucose. These tests have proven disappointing. On what sort of a foundation does the test under discussion today rest?

Many years ago it was established that the end-result of all bodily activities was the production of heat. It was also determined that under identical basal conditions normal individuals of the same age, sex, and body surface area gave off the same amount of heat.

As the actual measurement of the heat produced was exceedingly complicated, requiring the use of a very large and expensive apparatus, calorimeter, it was quite impractical for general use. Inasmuch as the transformation of muscular and glandular activity into heat depends upon oxidation, the determination of the amount of oxygen consumed in a given period enables one to state at what intensity the body metabolism is taking place. For a number of years, in computing the B. M., the oxygen consumed and the carbon dioxide given off were determined by the method of gas analysis. The technical aspects of this method were so great that it was only carried out in a few of the larger clinics. Thanks to Benedict, a relatively simple and portable apparatus was devised, with which one can quickly and accurately determine the oxygen consumption. Tables have been compiled from which one can easily compute the normal metabolic rate when the height, weight, sex and age are known. The trustworthiness of this method has been thoroughly established, if all the details that experience has shown necessary are carefully carried out. Boothby[5] warns that "if the conditions for determining a true basal metabolic rate are not obtained or the method of determination is not carried out with the care necessary to eliminate even slight errors, one of the most valuable methods of diagnosis and classification of disease will fall into discredit from the discordant results obtained."

We may now briefly discuss the last of the three points raised at the beginning of the paper. Is the test sufficiently simple of performance as to make it generally available?

There are several small, easily portable apparatuses on the market that accurately measure oxygen consumption. The Handy-Sanborn was used in all of the tests here reported. Because of the ease with which it can be carried about it may be used equally well in hospital, private home, office or dispensary, providing a rest period of at least one-half hour precedes the test. With very toxic patients, however, the test is better made in the home, or after resting quietly in the hospital, as the exertion of going to the office may increase the rate by over 10 per cent. If very toxic cases are tested in the office they should make the trip by automobile, and rest at least one hour before the test is run. In the very nervous it is advisable to make a "dummy test" the day before the real one, and whenever there is any question about the result, it should be repeated the next day. Concerning the interpretation of results, Benedict[6] says, "The simplification of the technique is dangerous when it makes it possible for the tyro to secure measurements, which frequently neither he nor his associates are in a position to interpret intelligently, and from which it is possible for him to draw deductions that are not only erroneous, but since they not infrequently make for or against operative procedure, may actually be of serious harm." Continuing, he says, "Unfortunately, the intellectual training of the operator has by no means progressed as rapidly as has the simplification of the technique."

In concluding I will review somewhat in detail the case of Mr. D., as it illustrates the value of B. M. in diagnosis, and as a guide to treatment.

Mr. H. D., aged 45, was first seen September 14, 1921, complaining of being shaky; weakness and trembling. His occupation, that of an insurance agent for an industrial company, necessitated walking several miles each day, and going up and down stairs a great many times. About ten weeks previously he began to feel weak. He continued at work through July, during the exceedingly hot weather, and shortly, in addition to his weakness, began to notice trembling in the legs after climbing stairs. His hands also trembled. He perspired freely, especially about the knees, so much so that his trousers would become wet. As has been stated, the weather at this time was exceedingly hot. His appetite failed and for the past two months he hiccoughed a great deal; the attacks never lasting over three minutes. Recently he had slept poorly. It had been noted by his brother that his complexion was be-

CHART 5.

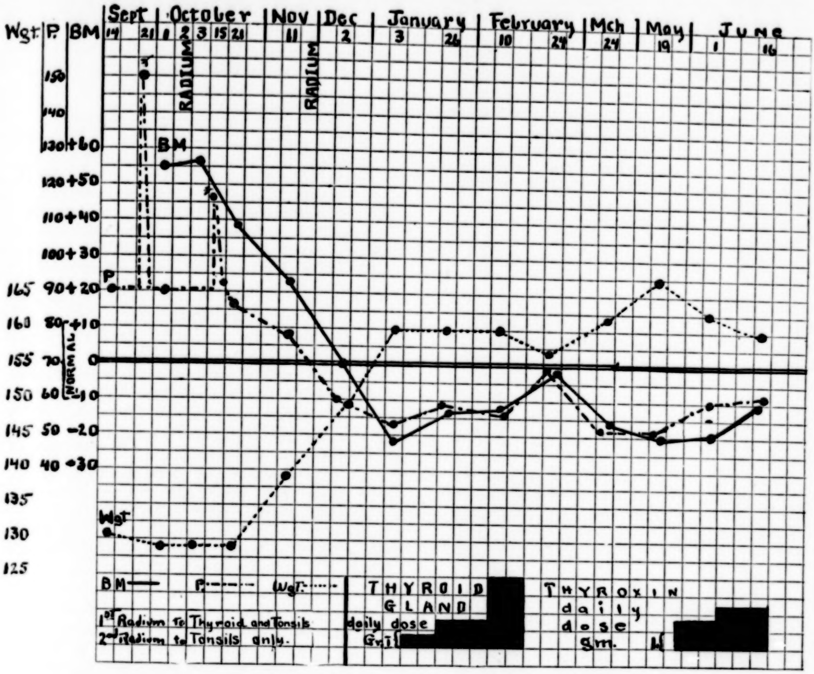
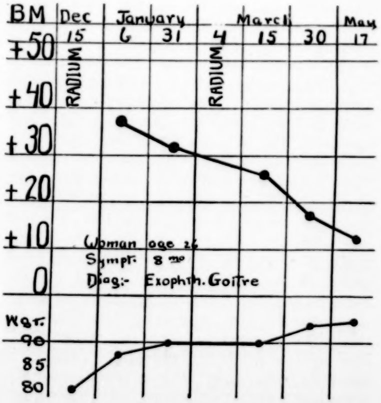


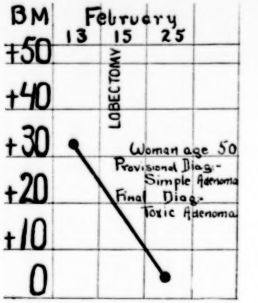
CHART 2.

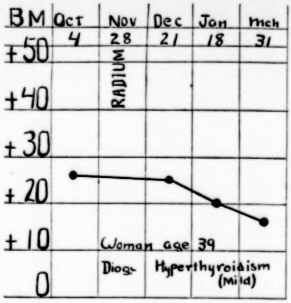
667 Pt's with Exoph. Goitre	Loss Strength	Loss Weight	B.M.	Total Toxicity
Primary Lobectomy	14.	14	36	64
One Ligation	16.5	19	51	86
Two Ligations - Rest - Thyroidectomy	22.	22	63	107

Pemberton

Surgical Management Toxic Goitres; Pemberton J.J.
Boston Med. Surg. Jour.
1922 - Feb. 2/23 - Vol. 186 - No.8.







coming muddy. He had lost 16 pounds in a year and during the past three weeks, though eating a good deal, had lost four pounds. For several months he had had nocturnal polyuria (two or three times), and sixteen years previously he was ill with "kidney trouble." The patient looked very ill, his color was rather earthy, his breath fetid; he was very weak and there was coarse tremor of the hands. There was a suggestion of prominence to the eyes, and the right lobe of the thyroid was very slightly enlarged. My attention was particularly focused on the tonsils, which were extraordinarily large and very septic. The day urine 945 c.c., night urine 690 c.c., the specific gravity was not fixed; there was no albumin and an occasional cast. Blood uric acid 7, urea nitrogen 24. The whole picture was thought to be dependent upon his very septic tonsils and secondary kidney damage. Prior to his coming under my observation he was seen by another physician, who suspected an early paralysis agitans, because of his marked tremor and rather expressionless face. His pulse was not especially rapid, 90 per minute, and according to his family physician, it was practically always under 90. The blood pressure, Wassermann, hemoglobin and red count were not remarkable. The leucocytes were 12,000 with 46 per cent. lymphocytes. He was referred to Dr. Warfield T. Longcope. The excitement and fatigue, incident to the trip to New York, was sufficient to bring on marked fibrillation, and at Dr. Longcope's examination the pulse varied from 130 to 150; the patient was also perspiring profusely. Dr. Longcope made a diagnosis of hyperthyroidism and because of the evident toxicity and myocardial damage advised x-ray rather than surgery. An electrocardiogram, taken by Dr. Eggleston at this time, showed evidence of myocardial disease and auricular fibrillation. Being interested in collecting medical opinions, Mr. D. consulted another clinician, of his own choice, while in New York, who assured him that the diagnosis of hyperthyroidism was unwarranted and advised removal of the tonsils. Because of the relatively slight enlargement of the thyroid, and the very obviously diseased tonsils, this latter opinion was concurred in after his return to Hartford by a surgeon who has seen much of hyperthyroid disease. The truth of DuBois'[7] statement, that the basal metabolic rate is more apt to be correct than nine out of ten consultants, was demonstrated by this case, as two basal metabolism determinations, made within three days, gave plus 55 per cent. and 56 per cent., respectively. (Chart 5.) The "total toxicity" was estimated at 96. Radium (200 m.gm., one-half inch, 13 areas, 60 min.) was then applied over the thyroid and tonsils, and six weeks later radium was again applied directly to the tonsils through the mouth, 100 m.gm., 45 min. each tonsil. Three weeks after the first application of radium, the B. M. had fallen from plus 55 per cent. to plus 38 per cent., and there was a slight improvement in the pulse rate. There had been no gain in weight at this time though the patient felt better. Two months after the application of the radium the B. M. was normal and the tonsils were about one-quarter their original size. One month later the B. M. was minus 18 per cent., and at this time thyroid gland in small doses was begun, gr. three-quarters daily; three weeks later it was minus 14 per cent., so the thyroid was increased to gr. one and one-half daily. Three weeks later still the B. M. was still below normal so the thyroid was increased to gr. 4 per day, and in three weeks the B. M. was again normal. Thyroid was then stopped and one month later it had dropped to minus 18 per cent. In this case the pulse follows the B. M. very closely and the weight increases as the metabolic rate falls. As is usual in similar cases, Dr. Heublein thought a second radium treatment would be necessary after an interval of six weeks. At the expiration of this time, although Mr. D. was better, he was far from well, but inasmuch as the B. M. rate was steadily falling it was deemed advisable to postpone the treatment for a time. It is interesting to speculate as to the degree of hypothyroidism he would have developed if the second application of radium had been made, as would have been the case had no B. M. determination been made. At present Mr. D. is in excellent condition, the slight prominence of the eyes has entirely subsided; the thyroid, which was only slightly enlarged, is, possibly, a trifle smaller. The reduction in the size of the tonsils has been as surprising as gratifying. The blood uric acid and urea are normal, and an electrocardiogram taken recently by Dr. Starr is normal in all respects. Mr. D. thinks he feels better the past month without thyroid than he did during the preceding month when he was taking it.

As deviations from the normal in basal metabolic rates are not always dependent upon diseases of the thyroid, a very careful history and painstaking examination should always precede the B. M. determination. This clinical study, if sufficiently thorough, will suffice to make the diagnosis in many cases. There are border-line cases, however, where the metabolic rate will prove very helpful. In conjunction with the usual clinical signs of toxicity the basal metabolic rate assists materially in deciding what form of therapy is most advisable. As changes in the metabolic rate frequently precede changes in the clinical picture, metabolism estimations at stated periods afford a valuable means of checking any therapeutic measure, either medical or surgical.

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NOTE ON MOISTURE ABSORBING EFFICIENCY OF CARBON DIOXIDE ABSORBENTS FOR METABOLISM APPARATUS.

By Robert E. Wilson, Boston.

Director of the Research Laboratory of Applied Chemistry of the Massachusetts Institute of Technology.

All those interested in the use of metabolism apparatus of the Benedict type will appreciate greatly the recent articles in this Journal* by Dr. Paul Roth of Battle Creek. There are, however, a few points with regard to the paper on "Moisture Absorbing Efficiency of CO_2 Absorbents" which should be mentioned as supplementary to the interesting data there presented.

It is unquestionably true that Wilson soda lime, designed as it was to have maximum CO_2 efficiency *without caking*, absorbs very little moisture from the air and maintains a relative humidity throughout the apparatus of about 80 per cent. at all times. Dr. Roth's article appears to imply, however, that this failure to absorb moisture as well as CO_2 is a fundamental defect in such an absorbent, which is certainly not the case. It is true, to be sure, as Dr. Roth points out, that the presence of this moisture in the air may cause an error of from 1½ to 3 per cent. (depending on the temperature) in calculating by the customary methods the true volume of oxygen consumed. This error is, however, caused *solely* by the use of correction tables which were calculated on the basis of reducing warm *dry* air to standard conditions of temperature and pressure, whereas correction tables of identical accuracy may be drawn up for any other constant humidity, either absolute or relative.

Fortunately, extensive humidity equilibrium measurements made in this laboratory and elsewhere on Wilson soda lime indicate that material of a given water content maintains substantially constant relative humidity at all ordinary temperatures, and that as marketed (16-18% H_2O) this relative humidity is 80 per cent. It does absorb small amounts of water from the nearly saturated air which reaches it in the metabolism apparatus, but has never been found to give humidities above 90 per cent. in service. The average values reported by Dr. Roth were slightly lower than this, but in the course of correspondence Dr. Roth has attributed this to allowing some of the moisture to escape from the soda lime before use, and he reports recent values on half-used soda lime of 79.1%, 81.8% and 82.8%, which confirms the above conclusion. Similar measurements on caking absorbents which contain larger percentages of caustic soda, indicate humidities varying from 0 to 20 per cent. or higher, the higher quantities being due to the water seal, or to partly used material.

It is therefore apparent that the average error made in correcting the volumes measured with Wilson soda lime by using a correction table calculated for 80 per cent. humidity, is actually *less* than that made by using a caking absorbent and correcting on the customary assumption of 0 per cent. humidity. In both cases, however, the accuracy is well within the limits of error of the measurements.

In order to retain the advantage of non-caking absorbents for CO_2 and yet eliminate the errors due to calculating on the basis of the ordinary tables, the following correction table has been constructed by modifying Clarke's table* to allow for 80 per cent. relative humidity

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*Vol. 186, pp. 411-465 and 491-501 (1922).

*Clarke's table given in Dr. Roth's article was originally based on a similar table by Carpenter. Since the writer's table was calculated his attention has been called to a somewhat similar table calculated by McKesson for 67% humidity in a recent booklet decribing his Metabolor. The directions there given for drying the soda lime will, however, lead to erroneous results.

FACTORS** FOR REDUCING VOLUMES OF WARM 80% SATURATED AIR TO 0°C AND 760 MM.

Formula:— $\frac{1}{1+0.00367t} + \frac{P—0.80Pw^*}{760}$=Factor

						Temp. °C									
P(m.m.)	15°	16°	17°	18°	19°	20°	21°	22°	23°	24°	25°	26°	27°	28°	29°	30°
650	.798	.794	.791	.787	.784	.780	.777	.773	.769	.765	.761	.756	.752	.748	.744	.740
655	.804	.800	.797	.793	.790	.786	.783	.779	.775	.771	.767	.762	.758	.754	.750	.746
660	.810	.806	.803	.799	.796	.792	.789	.785	.781	.777	.773	.768	.764	.760	.756	.752
665	.816	.812	.809	.805	.802	.798	.795	.791	.787	.783	.779	.774	.770	.766	.762	.758
670	.822	.819	.816	.812	.809	.805	.801	.797	.793	.789	.785	.780	.776	.772	.768	.764
675	.828	.825	.821	.818	.815	.812	.807	.803	.799	.795	.791	.786	.782	.778	.774	.770
680	.834	.830	.827	.824	.821	.818	.813	.809	.805	.801	.797	.792	.788	.784	.780	.776
685	.841	.837	.833	.830	.827	.824	.819	.815	.811	.807	.803	.798	.794	.790	.786	.782
690	.848	.844	.841	.837	.834	.830	.825	.821	.817	.813	.809	.804	.800	.796	.792	.788
695	.854	.850	.847	.843	.840	.836	.831	.827	.823	.819	.815	.810	.806	.802	.798	.794
700	.860	.856	.853	.849	.846	.842	.837	.833	.829	.825	.821	.816	.812	.808	.804	.800
705	.866	.862	.859	.855	.852	.848	.843	.839	.835	.831	.827	.822	.818	.814	.810	.806
710	.872	.858	.865	.861	.858	.854	.849	.845	.841	.837	.833	.828	.824	.820	.816	.812
715	.878	.874	.871	.867	.864	.860	.855	.851	.847	.843	.839	.834	.830	.826	.822	.818
720	.885	.881	.877	.873	.870	.866	.861	.857	.853	.849	.845	.840	.836	.832	.828	.824
725	.891	.887	.883	.879	.876	.872	.867	.863	.859	.855	.851	.846	.842	.838	.834	.830
730	.897	.894	.890	.886	.882	.878	.873	.869	.865	.861	.857	.852	.848	.844	.840	.836
735	.904	.900	.896	.892	.888	.884	.879	.875	.871	.867	.863	.858	.854	.850	.846	.842
740	.910	.906	.902	.898	.894	.890	.885	.881	.877	.873	.869	.864	.860	.856	.852	.848
745	.916	.912	.908	.904	.900	.896	.891	.887	.883	.879	.875	.869	.865	.861	.857	.853
750	.922	.918	.914	.910	.906	.902	.897	.893	.889	.885	.881	.875	.871	.867	.863	.859
755	.928	.924	.920	.916	.912	.908	.903	.899	.895	.891	.887	.881	.877	.873	.869	.865
760	.934	.930	.926	.922	.918	.914	.909	.905	.901	.897	.893	.887	.883	.879	.875	.871
765	.941	.936	.932	.928	.924	.920	.915	.911	.907	.903	.899	.893	.889	.885	.881	.877
770	.947	.943	.939	.935	.930	.926	.921	.917	.913	.909	.905	.899	.895	.891	.887	.883
775	.954	.949	.945	.941	.936	.932	.927	.923	.919	.915	.911	.905	.901	.897	.893	.889
780	.960	.956	.952	.948	.943	.939	.934	.930	.926	.921	.917	.911	.907	.903	.899	.895

*Pw=Pressure of water vapor at the temperature in question.
**Table calculated by Tyler Fuwa on basis of table by E. H. Clarke.

in the warm air as measured. This change decreases Clarke's correction factors by amounts varying from .013 at 15°C. to .030 at 30°C.

While the use of a drying agent such as calcium chloride in conjunction with Wilson soda lime is possible, the two should not be placed close together, because the $CaCl_2$ simply exhausts itself in absorbing water from the soda lime, which latter needs the high moisture content in order to have its maximum efficiency. It is much better to use all the available space for the CO_2 absorbent only.

In addition to their non-caking qualities, CO_2 absorbents which do not absorb moisture have two other important advantages, in that (a) the heat evolved in the absorbent is *much* less, thus preventing undesirable temperature fluctuations during the test; and (b) there is no need to use a moistener in the mouthpiece, as is otherwise required to make the dry air comfortable for breathing by the patient.

From the foregoing it is obvious that the water content of Wilson soda lime should be kept above 14 per cent., both in order to insure high CO_2 absorbing efficiency and to keep the humidity within the range for which the correction table is calculated.

The accumulated experience of a considerable number of experimenters with metabolism apparatus, confirmed by Dr. Roth, indicates that the use of caking absorbents by themselves is impracticable, if not an unmitigated nuisance. By the use of the foregoing correction table, however, all the advantages of the non-caking, nonheating absorbents can be obtained without any sacrifice whatever in the accuracy of the results.

THE MORTALITY FROM DIABETES.

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In a recent discussion of the mortality from biliary and urinary calculi I tentatively presented the subject in its international aspects to draw attention to the apparent geographical distribution of these affections.* The results of a similar inquiry into the local incidence of diabetes seem to be deserving of a brief discussion, primarily for the purpose of suggesting further research into certain etiological aspects of this disease which, as yet, have received exceedingly superficial consideration. It is clearly realized, of course, that the diagnosis in diabetes is much more difficult than in the case of acute infections or readily cognizable chronic diseases. Few diseases have a more technical literature than diabetes, and it is clearly apprehended that serious objections may be raised against the use of crude statistical methods in determining its probable geographical distribution. But in the absence of a previous extended international comparison of available death rates it is hoped that the following observations will be received, in due appreciation of the intrinsic difficulty of considering the subject statistically from a strictly scientific point of view.

It is to be assumed that in the mortality returns of diabetes, both diabetes insipidus and diabetes mellitus are included, while, of course, it is the latter form of the disease which is the more important. Errors in diagnosis without a chemical examination of the urine are no doubt of fairly common occurrence, but how far this has been determined by autopsy findings is not, apparently, a matter of trustworthy record. The fact, however, that diabetes is, as a rule, a disease of prolonged duration, minimizes the chances of error in terminal diagnosis to a considerable degree.

It may not be out of place in this connection for me to direct attention to an extremely suggestive discussion on "The Causes of Death in Diabetes," by Dr. Elliott P. Joslin, of Boston, delivered before the New York Academy of Medicine, December 21, 1915. Dr. Joslin, in an analysis of the end-results of 945 diabetic cases, ascertained that 921, or 97.5 per cent., had been traced, and 425, or 46.2 per cent. of the traced, had died. The actual causes of death were ascertained in all but five of the 425 cases. There were 147 cases without coma, and 273 cases with coma. Of the former cases, 17 suffered from cancer, 16 from pulmonary tuberculosis, 62 from cardio-renal and vascular diseases, and 36 from infections of various kinds, including 15 cases of pneumonia. Of the deaths, 15 occurred in hospitals, and 258 occurred outside of hospitals. It is suggestive that of the 17 cases of cancer complicated by diabetes six should have been cases of cancer of the liver. It is explained that cancer apparently developed after the diabetes in eight cases, and may have developed before or coincident with the diabetes in seven others. It is such investigations as the one by Dr. Joslin that suggest the most fruitful field for statistical inquiry into the etiology of diabetic affections.

The exceptional frequency of diabetes among Jews is beyond the range of controversy. In a recent investigation by a Dutch authority on the vital statistics of Amsterdam, earlier investigations are sustained by additional evidence derived from a wide range of information. Countries with a large Jewish population are, therefore, likely to have a high rate of incidence, attributable primarily to racial influences. Subject to these very fragmentary observations, attention is directed to the following table, giving diabetes death rates for specified countries, in most cases for the five years ending with 1919:

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*New York Medical Journal.

TABLE 1.

MORTALITY FROM DIABETES IN FOREIGN COUNTRIES.

(Rates per 100,000 population.)

	Rate		*Rate*
Island of Malta	38.4	Spain	5.8
Isle of Man	18.1	Ceylon	5.6
Island of Guernsey	16.1	Italy	5.1
Bermuda	15.2	Island of Mauritius	5.6
New Zealand	14.6	Uruguay	5.0
Holland	12.5	Hawaii	4.6
England and Wales	11.8	Trinidad and Tobago	4.3
Province of Ontario (Canada)	11.5	Newfoundland	3.6
		Cuba	3.2
Egypt	11.3	Japan	2.8
Australia	11.3	Straits Settlements	2.6
Nova Scotia	10.5	Chile	2.4
Tasmania	10.1	Porto Rico	2.3
Scotland	9.7	British Guiana	1.8
Ireland	8.3	Grenada	1.6
Union of So. Africa	7.7	Province of Tucuman (Argentine Republic)	1.6
Province of Alberta (Canada)	6.7	Jamaica	1.5
Province of Manitoba (Canada)	6.0	Bahamas	1.1
		Venezuela	1.0

The range in relative frequency is really extraordinary, reaching a maximum of 38.4 per 100,000 of population in the case of the Island of Malta, 18.1 for the Isle of Man, and 16.1 for the Island of Guernsey; and a minimum of 1.5 for the Island of Jamaica, 1.1 for the Bahamas, and 1.0 for Venezuela. The average diabetes death rate for the United States Registration Area is 16.4 per 100,000 of population, practically the maximum rate attained for the countries or islands which rank highest in the foregoing table. The American death rate is decidedly above the normal average of 11.8 for England and Wales, and while unquestionably somewhat affected by the relatively large Jewish population in our large cities, this factor cannot be considered as primarily responsible for the marked excess. Since diabetes is essentially a disease of adult age, the following table of death rates, at ages 20 and over, is included for a number of important countries.

TABLE 2.

MORTALITY FROM DIABETES, AGES 20 YEARS AND OVER.

(Rates per 100,000 population.)

	Rate
Island of Malta	67.8
New Zealand	23.2
Holland	21.0
England and Wales	21.3
Australia	17.8
Nova Scotia	15.8
Tasmania	16.1
Scotland	17.0
Ireland	12.7
Union of South Africa	13.7
Uruguay	10.3
Province of Alberta, Canada	9.5
Province of Manitoba, Canada	8.8
Italy	8.6
Province of Tucuman, Argentina	3.3

This table does not change materially the previous conclusions as to the relative frequency of local incidence.

To the foregoing I add a few relative rates, according to sex, limiting the comparison to ages 20 and over. For Malta the male diabetic death rate is 62.8 per 100,000 of population; for females, 72.8. For New Zealand the rates are 22.3 and 24.1, respectively; for Holland, 18.7 and 23.1; and for England and Wales, 25.7 and 18.2. For Australia the males have a rate of 15.3, while the females have a rate of 20.4; and in Tasmania the same excess in the female mortality is met with, the rates being 13.4 and 18.8, respectively. For Scotland the male rate is 16.1 and the female rate 17.8; while for Ireland the respective rates are 14.4 and 11.1 per 100,000 of population. In Italy women are distinctly less liable than men, the rate for the former being 6.8, while for the latter the rate is 10.5; but in Uruguay this position is reversed, the male rate being 8.2 and the female rate 12.6 per 100,000 population. In a general way, therefore, this analysis would seem to support the conclusion that women are somewhat more liable to diabetic affections than men.

For more restricted urban areas the rates are probably more trustworthy and significant. The third table will show the diabetic death rate of the principal foreign cities for which the rates or information could be obtained, most of the data being for the five years ending with 1918 or 1919:

TABLE 3.

MORTALITY FROM DIABETES IN FOREIGN CITIES.

(Rates per 100,000 population.)

	Rate
Berlin, Germany	17.9
Copenhagen, Denmark	17.1
Amsterdam, Holland	15.9
Paris, France	15.5
Barcelona, Spain	14.9
Florence, Italy	14.1
St John, New Brunswick	13.4
Christiania, Norway	13.2
San Salvador, Salvador	13.0
Colombo, Ceylon	12.5
Victoria City, British Columbia	11.5
Basal, Switzerland	11.4
Montreal, Canada	11.2
Toronto, Canada	11.1
Montevideo, Uruguay	10.6
Edinburgh, Scotland	10.4
London, England	10.3
Belfast, Ireland	9.5
Glasgow, Scotland	8.8
Madrid, Spain	8.8
Turin, Italy	7.2
Milan, Italy	6.3
Mexico City, Mexico	5.4
Manila, P. I.	4.5
Singapore, Straits Settlements	4.3
Tokio, Japan	4.1

To facilitate a convenient comparison it may be stated that the normal diabetic death rate of New York City for the five years ending with 1919 was 19.8 per 100,000 of population, or higher than the maximum rate, according to the table, reported for the city of Berlin, or 17.9 per 100,000, or for Copenhagen, Denmark, for which the rate is 17.1; but for Amsterdam, Holland, the rate is 15.9. The minimum rates are reported for Tokio, Japan, or 4.1; for Singapore, or 4.3; for Manila, P. I., or 4.5; and for the City of Mexico, or 5.4.

In the case of the cities, as in the case of the countries, the rates do not undergo a material change in their relative positions when reduced to the age period 20 and over. For a few of the cities for which the information is available the following rates, according to sex, at ages 20 and over, are of interest: Berlin, Germany, males 31.4 and females 20.8 per 100,000; Copenhagen, Denmark, males 28.1 and females 20.9; Florence, Italy, males 27.1 and females 14.5; Christiania, Norway, males 24.4 and females 14.5; Victoria, B. C., males 12.0 and females 15.3; Montevideo, Uruguay, males 13.7 and females 25.9; London, England, males 16.8 and females 14.8; and Singapore, Straits Settlement, males 5.5 and females 6.7.

The results of this analysis would seem to contradict the previous conclusion regarding the higher frequency of diabetes in the case of females, but this may possibly be explained by a higher incidence of diabetic affections among women in rural districts, who, of course, make up the larger portion of the population of the countries considered.

It is evident that a much more extended inquiry is necessary to determine the facts with scientific precision. Whether diabetes is on the increase or not is secondary to the question that the disease is widespread among the well-to-do and the prosperous, among whom hypernutrition and excess in weight emphasize abnormalities of metabolism as the result of erroneous dietary or other habits. Diabetes unquestionably is closely correlated to excess in weight, and the prevention of the disease is, therefore, within the range of possibility in a considerable number of cases. The apparent increase in diabetic affections would seem to coincide with the increase in the death rate from cancer. Years ago Manders and others held that diabetes and cancer occurred frequently in the same person and at the same time. The statistics previously quoted are at least suggestive on this point. A medical journal, some years since, pointed out that:

"The discovery that malignant tumors were at times rich in glycogen also led Manders to look upon a cancer as a 'local diabetes,' curable in theory by a diastatic enzyme. Later it was shown that the glycogen in tumors was not connected with their pathogenesis and had little significance of any sort." But more recently, "Hirshfeld, in the *Berliner klinische Wochenschrift*, . . . called attention to a certain relationship between diabetes and neoplasiae of the female genitals, including the normal hyperplasia of the gravid uterus. The claims advanced for the existence of this association are as follows: Pregnant diabetic women show a diminished tolerance for carbohydrates, and this loss may not be regained. Tumors of the generative organs often develop at about the time of inception of diabetes, as if the former were able to influence unfavorably the carbohydrate metabolism. Cutting down the carbohydrates will sometimes diminish the degree of hemorrhage from uterine myomata. Again, extirpation of these tumors—uterine fibromyomata, ovarian cystomata—will often cause improvement in a diabetic patient. Glycosuria may disappear outright or persist to a limited degree."

It is, therefore, considered reasonable to regard this association of tumors with diabetes as not wholly foreign to the older views of Manders and others.

These observations are deserving of thoughtful consideration. There is certainly a sufficient amount of evidence to support the conclusion that hypernutrition and malignant disease more often coincide than can be explained as a matter of pure chance; while diabetes and excessive body weight are more often associated than not in cases which terminate fatally. In any event, it is extremely suggestive that the diabetic death rate of the United States Registration Area and of the city of New York should be about the highest known for any country or city at the present time.

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A NOTE ON GENERAL PARESIS AT THE DANVERS STATE HOSPITAL.*

By Harvey M. Watkins, M.D., Hathorne, Mass.

The *problem* of syphilis is ever present. Despite the educational campaigns on venereal disease, the articles in lay and professional journals, the continual tendency toward moral and social uplift, yet we see each year the victims of neglected treatment being admitted to our institution.

The purpose of this paper is to consider briefly that class of patients, the general paretic, who was formerly thought to be a permanent invalid and hopelessly bedridden; the most that could be expected was a short remission. Their treatment consisted of custodial care, therapeutic indifference and pessimism. The end came after a long period of being bedridden, and bedsores were always conspicuous.

In this hospital from 12 to 17 per cent. of all admissions show evidence of syphilis in some form. Of this number over one-half show positive signs, clinically or serologically, of general paresis; the yearly average for the last five years being 55 per year.

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*Read before the Essex County (South) Medical Society, Feb. 8, 1922, at Danvers State Hospital.

A routine blood Wassermann is taken in every admission. If this is positive or if neurological signs or symptoms are present a lumbar puncture is done. Frequently a case is seen that has a negative blood with obscure clinical symptoms. In all such as this a lumbar puncture is also made, which is of great importance, both from a diagnostic and prognostic standpoint.

At the present time we have 54 paretics in the hospital, 40 males and 14 females. Of this number, 42 are being daily employed in some sort of work, varying in amount from one to six hours. The character of their work ranges from polishing or swabbing a floor, for an hour a day, to carrying on routine duties as a plumber, running a washing-machine in the laundry, working on farm, making cement blocks, etc.; in fact, any and all occupations around the hospital, that can be done by patients, have been done at different times by the paretic; some showing a fair amount of initiative, others requiring a large amount of supervision and several requiring constant oversight, but are able to carry on in some kind of employment.

The most interesting group at present is that group that is residing in the community. Thirteen such cases are now under our observation, 8 males and 5 females. Four of this number are returning on Monday for treatment and carrying on their former occupations the remainder of the week. Industrially and economically these present many improvements over the past. One, a mother, is caring for her home and family, with the assistance of a maid. One, a male, is doing micrometer work in a shoe factory, another cutting soles, another stitching uppers, two are engaged in farming, one works in an electrical plant, while one, a female, has been outside the institution since August, 1913. She is doing housework as a maid; has changed positions three or four times. Her present employer understands her temperament, and while at times she is somewhat irritable, requiring a visit from our outpatient department, she has been able to get along for about nine years without returning to the hospital. Some are able to continue as regularly employed while others are capable of only a few days a week. They are followed up by our Social Service Department, adjustments are made in the community, work occasionally changed, advice and counsel freely given. They are also seen at clinics and assistance given in every possible way. In this manner six have managed to remain outside for an average of four years, six months each, thereby contributing to the support of their families, their own, and to the relief of the huge burden our State must bear in the care of its charges.

A vast amount of literature on the treatment of paresis is constantly being published, various methods of treatment devised and conflicting claims advanced for each. Elaborate technique is required for some, a thorough knowledge of surgery is desirable in others. While all of these offer advantages and disadvantages, many of them are not practical. Our idea has been that it does not matter a great deal as to the method employed as long as the patient is treated, regularly and continually, and so long as the antisyphilitic remedies come into contact with the blood, the cerebrospinal fluid and their adjacent structures.

Our plan of treatment is not offered as the best, bar none, but is offered as a practical, workable solution, under our present knowledge of the disease. It may be divided into specific, hydrotherapeutic, medicinal, and follow-up. Well-diluted arsphenamine solution (0.1 grm. in 30 cc.) 0.3 grm., given intravenously weekly, for a period of 6 to 8 weeks, followed by a course of mercury injections for a similar period, given intramuscularly; potassium iodide may be given for a like period. Treatment is then omitted for two weeks; then a repetition of the above course. After six months if there is evidence of improvement, clinically or serologically, the treatment is continued. If no improvement, then a question arises of further treatment. In the majority of cases it is continued, unless by reason of physical failure or severe untoward reactions, it is deemed advisable to discontinue it. Sometimes arsphenamine, *per se*, may be contraindicated and, therefore, other forms of treatment are necessary.

At times a lumbar puncture is done previous to administration, thereby better fitting the cerebrospinal fluid to absorb the arsphenamine from the blood. This is not frequently required as it is a known fact that it does reach the cerebrospinal fluid, and can be recovered there as such, thereby showing that intravenously administered it does reach the central nervous system. Hydrotherapy has been of great service, as body elimination is very desirable, and continuous baths, tonic showers and cabinet sweats are of use in quieting some of the more excited stages. Tonics are useful, laxative required, and the physical comfort of the patient should go hand in hand with any specific therapy.

As soon after admission as possible, suitable work is provided and encouragement offered by all those that come in contact with the patient; and last, but by no means least, is that part of the program carried on by our Social Service Department, whereby the patient can be placed in the community, employment found, difficulties righted, and if not able to reside outside the hospital for a long period of time, short visits may be arranged.

For the hospital year ending September 30, 1921, there have been administered 1267 arsphenamine injections, 882 mercuries, a weekly average of 25 and 17, respectively.

It is interesting to note at this time the effect of treatment on the terminal stages. Formerly the paretic remained in bed for several weeks or months before the end came. He was a constant care, helpless, bedsores prominent, tube-feedings constantly required, untidy and cachectic. By treatment the terminal stages are shortened, the last four deaths being in bed less than three days.

In passing, it may be mentioned that all other cases of syphilis are actively treated and all Wassermanns are rendered negative before discharge, thereby trying to prevent the development of tertiary symptoms at a later date.

CONCLUSIONS.

The apparent improvement in a few cases justifies the belief that routine administration of antisyphilitic therapy is called for in all cases of paresis, and that he is a better patient, both within and without the institution, under treatment. Practically no ill effects have been observed under intensive treatment. Twenty per cent. are able to "carry on" outside by the aid of the Social Service Department and our outside clinics. Seventy-seven per cent. of those in hospital are able to do some form of useful work, while, of the sixty-seven studied, only nine are in bed, and only four of those continuously.

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BRIEF ANALYSIS OF 500 CASES REFERRED TO THE BOSTON CITY HOSPITAL OUT-PATIENT HEART CLINIC.*

By Burton E. Hamilton, M.D., Boston,
and
Joseph E. Hallisey, M.D., Boston.

A special cardiac clinic was started in the Medical Out-Patient Department of the Boston City Hospital two years ago. This paper refers to the first 500 cases sent to this clinic. Five hundred cases should represent the amount of heart disease in a community of somewhere near 25,000 souls. It seems reasonable to believe that the cases in this clinic, from the nature of the hospital, should afford a picture in miniature of heart disease in the whole community, at any rate as little distorted by artificial conditions as we can obtain offhand. We have no actual survey of a community. Surveys of heart disease in schools, the army, industrial groups, among life insurance applicants, afford only narrow glimpses of the whole picture.

Totally disabled, bedridden cases, do not come to this clinic, so the picture presented should not be at any rate unduly gloomy.

Following is the grouping of these cases by diagnosis:

Rheumatic Heart Disease	202
Potential Rheumatic Heart Disease	45
Arteriosclerotic Heart Disease	26
Cardiovascular Syphilis	26
Congenital Heart (or Suspected Congenital Heart)	19
No Heart Disease	69
Neurasthenia with Cardiovascular Symptoms	40
Heart Changes with Hypertension	19
Miscellaneous	54
	500

Etiological classification of heart disease such as the above has been used to some slight extent for a long time; of late years its use is becoming more and more general. We have used it since the clinic started. Its advantages are obvious. It is impossible to think clearly about heart disease without some form of etiological classification.

A few of the above groups deserve comment. Following is a division of the rheumatic heart disease group into decades by ages of the patients:

Age of Patients in Decades	*Number of Patients*
-10	27
11-20	102
21-30	27
31-40	21
41-50	18
Over 50	7
	202

We have no wish to attack so vast a subject as rheumatic heart disease in this paper, but these figures demand some discussion. One hundred twenty-nine patients under twenty, with 48 in the next two decades is remarkable. One hundred two in the second decade, and 27 in the third, suggest that few more than a score of the 102 will be alive and not disabled ten years hence. There is no reason to believe that any artificial factors have sent a disproportionate number of children and adolescents to the clinic.

More than half the cases in the decades above the second have contracted their heart disease since their twentieth year. This will counteract any possible unrecognized factors that may have sent us a disproportionate number of adolescents. Among the patients in the upper decades are some that had their heart disease in adolescence and are still far from disability. It is possible for some to live long and live well in spite of rheumatic heart disease.

Not far from one per cent. of our school children have rheumatic heart disease. In the light of the above figures this large number of children in the community with rheumatic heart disease makes an unpleasant picture to contemplate.

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*Given in part at the Boston City Hospital Clinical Meeting, April 14, 1922.

It is generally believed from convincing personal observations (that nearly every physician dealing with rheumatic heart disease has made) that removal of tonsils and of oral sepsis has a beneficial effect in several ways on the progress of rheumatic heart disease. We have some statistics to bear this out. But many of the successful cases in this clinic have succeeded in spite of complete neglect of these matters. Many others we see pursue a rapid downward course in spite of every reasonable effort at removal of foci of infection and closure of portals of entry. We can repeatedly pair two similar cases, and under similar treatment from this point of view watch one do well and the other progress steadily to heart failure and total disability. These procedures do not offer the final answer to the problem. This is fairly generally believed, and we have again some statistics to confirm this belief.

In this clinic we are continually impressed with the probable fact that many ambulatory rheumatic heart disease cases have a low grade active infectious process at work in their hearts, and that this active infection rather than mechanical handicaps from old scars, or repeated reinfection, is what accounts for the continued downward progress of many cases many months after a rheumatic fever attack has subsided, and proper attention to teeth, tonsils, etc., been given. We know that rheumatic heart disease has active febrile stages. Nearly every one agrees that during these stages rest in bed is essential. We have endeavored in this clinic each time that we have made a diagnosis of rheumatic heart disease, to add to this, so far as we could, whether or not the disease was active at the time. We have tried to give patients whose heart disease we believed to be active, rest in bed until signs of activity ceased. Diagnosis of this activity is a very unsatisfactory task to attempt in out-patient work. The principal evidence for it is fever (often slight) without other demonstrable cause than a rheumatic heart disease. We have obtained temperature records on suspected cases by various means; such as a week in hospital, or in bed at home with daily visits by district nurses. In 49 (out of the 202) cases we have been able to make a diagnosis of active or probably active rheumatic heart disease. In some other instances we have been forced to recognize activity when it was not at first suspected, by the progress of the case in question.

It remains to be seen whether after these methods are faithfully pursued a survey of cases in this clinic a generation hence will present a less unsatisfactory picture than the present one.

Following is the number of rheumatic heart disease cases showing, so far as these diagnoses can be made, pure aortic regurgitation, pure mitral stenosis, combined aortic regurgitation and mitral stenosis, and the number of patients under each of these headings that are over 30 years of age.

Number of patients with aortic regurgitation, 28 (of these four aged over 30); mitral stenosis, 56 (of these 23 aged over 30); aortic regurgitation and mitral stenosis, 22 (of these five aged over 30).

It is evident first that the old belief, now generally discredited, but still occasionally expressed, that aortic regurgitation is more often due to syphilis than to rheumatic diseases, is wrong. Here are fifty cases of aortic regurgitation from rheumatic heart disease, against a total of twenty-six cases of syphilitic heart disease in this open clinic.

We often hear it stated that pure aortic regurgitation is a less disabling condition than mitral stenosis. An occasional pair of cases bears this out, but in this series of rheumatic heart disease cases many more (and a higher percentage of) the mitral stenosis cases have lived long and well, than of the cases of aortic regurgitation. In general, basing prognosis in rheumatic heart disease on the site or extent of a lesion is bound, by the nature of the disease, to be unsatisfactory. This point is mentioned simply because diagnostic analysis of these cases brings it up. Experience in this clinic suggests, as is reasonable, that activity of the infection is the single most important factor in the prognosis of rheumatic heart disease.

The potential rheumatic heart disease group (patients that have, or have had, chorea or rheumatic fever without as yet having demonstrable heart disease) undoubtedly should be larger. This is a really new diagnosis, but one welcome to all familiar with rheumatic heart disease. It is in increasingly general use due to the approval of the New York Association of Cardiac Clinics and to the efforts of Dr. St. Lawrence of New York, who has showed its significance in practice. As yet it is not fully recognized that these cases are referable to a special heart clinic.

Arteriosclerotic heart disease is a very elastic diagnosis. There is no satisfactory standard as yet for its use. It is not, of course, a pathological and clinical entity. In certain cases it is, however, as clean cut clinically as, for instance, Parkinson's disease. We have tried to use this diagnosis only in cases with definite heart changes which could be accounted for only by the degenerative changes associated with age.

The groups called "No Heart Disease" and "Neurasthenic States with Cardio-vascular Symptoms" form the rejections from the clinic. These combined diagnoses should approximate 30 per cent. of the total cases referred to the clinic. For various reasons we did not keep records of many of these cases at first, but only of those that for some reason or other we wished to re-examine. About half the total rejections might be classed as neurasthenics with some combination of the following symptoms predominating: breathlessness, weakness, tachycardia, palpitation, heart pain, giddiness, fainting, trembling, vasomotor disturbances (such as cyanosis).

No combination of these symptoms *alone* justifies diagnosis of heart disease. (A possible exception of this statement might be a convincing history of "true" angina pectoris without other symptoms. No such case has appeared in this clinic. Three diagnoses of angina pectoris have been made in these 500 cases. Two had cardiovascular syphilis, the other was classed as arteriosclerotic heart disease. Heart pain as a symptom is very common in the clinic, bearing no relation to heart disease.)

These symptoms are the ones that physicians in military service became familiar with during the world war, grouped under various names such as "Effort Syndrome," "Soldier's Heart," "Neuro-circulatory Asthenia," etc. A great amount of careful study was done on these conditions, and satisfactory methods for differentiating patients disabled by this state from those disabled by demonstrable organic disease, were evolved. Yet now we find the heart clinic, at any rate, pervaded by these patients who are without any true signs of heart disease, but nearly all of whom have been told by physicians in the community at some time or other that they had some disabling heart disease.

It is interesting to remember the attenton paid in medical literature and in discussion to this class of cases three and four years ago, and the nearly total absence of such interest now. It is not suitable in this paper to go into the matter deeply, but this brief survey of 500 unselected heart cases suggests at once that there is a large group of more or less disabled individuals in our general out-patient departments that is, as a rule, wrongly diagnosed and consequently wrongly treated.

Furthermore, many of the cases listed here under diagnoses of true heart disease show in addition a complicating neurasthenia. They are often disabled by symptoms included in the above list, and not by symptoms in any sense directly due to heart disease. It is remarkable how often the death of a friend or relative of a heart patient immediately precedes this patient's increased disability from some of the above symptoms. Successful classification and treatment of (at any rate adult) heart patients depends in large part on the differentiation of disability due to heart failure from disability due to complicating fatigue symptoms resulting from social misfortune, worry, or overwork. This is self-evident, but again, the large number of heart cases in this clinic disabled by "neurasthenia" demands recognition in this analysis.

CONCLUSIONS.

From a brief survey of 500 unselected cases of heart disease it appears that:

1. Rheumatic heart disease is extraordinarily fatal, at any rate among children and adolescents. This series suggests that the great majority of adolescents with rheumatic heart disease have an expectation of life of less than a decade.
2. Forty-nine of 202 unselected rheumatic heart disease cases, under careful observation, showed more or less strong evidence of an active infectious process of the heart. Activity of rheumatic heart disease is easily overlooked.
3. Approximately 15 per cent. of cases referred to a general heart clinic have neurasthenia with symptoms suggesting heart disease. These cases usually have been diagnosed wrongly as cases of true heart disease.

LANTERN SLIDE DEMONSTRATION OF SOME POINTS OF HEART DISEASE.

By William D. Reid, M.D., Boston.

About twenty slides, comprising photographs, diagrams and electrocardiograms of normal and pathological hearts were shown. They included some of the recent changes in the knowledge of cardiac physiology and other data which support the conception that the crescendo murmur ending in a sharp first sound is early systolic in time and ventricular in causation rather than presystolic and due to the contraction of the auricle. The subject does not lend itself to further presentation without reproduction of the cuts.

SOME FACTS CONCERNING DIGITALIS.*

By Thomas J. O'Brien, M.D., Boston.

Granted that we have a well-taken history, a thorough physical examination, correct interpretations of our laboratory findings, and the results of our instruments of precision; in other words, a correct diagnosis, yet our patient is not benefited unless we administer the correct treatment. Personally, I feel that the weakest link in the chain of clinical medicine is the application of correct treatment, and this is especially so in treating diseases of the heart.

Digitalis was first introduced to the medical profession by William Withering, about 1775, and while it is one of our most valuable drugs, it is, perhaps, the least understood. When we lose confidence in its action, and even when it has been said that hundreds of patients die annually, from the fact that digitalis and its allies have not possessed the virtues required of them, the blame is seldom merited, being more correctly due to improper dosage, deterioration of drug, or faulty selection of treatment.

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*Read at the Staff Clinical Meeting at the Boston City Hospital, April 14, 1922; also at the Annual Meeting of the Carney Hospital Alumni Association, April 26, 1922.

Digitalis is a perennial plant, indigenous to Western and Central Europe, and may be grown in the United States; but unless the soil contains iron or manganese, the leaves have little medicinal value. In Virginia, Wisconsin, Minnesota, and near the Rocky Mountains, are found the best products in this country, while that grown in Kentucky, which has a clay soil, is found to be worthless for medicine. American digitalis compares favorably with that grown in Europe, but only eight of the twenty-five specimens examined by Pratt and Morrison came up to standard of the United States Pharmacopoeia.

While digitalis is official in the pharmacopoeias of all lands, we find different requirements, some specifying that the leaves are to be used within a year of time of being collected; some requiring that the leaves be gathered from wild plants; and others, that the leaves be gathered while plant is beginning to bloom. In the United States Pharmacopoeia of 1890, only the leaves collected from the plants of the second year's growth were accepted as official, but the present pharmacopoeia specifies the carefully dried leaves of the digitalis purpurea, without the presence or admixture of more than 2 per cent. of stems, flowers, or other foreign matter. The strength of the tincture is determined by a biological assay, the minimum lethal dose being not greater than .006 mil. of tincture for each gram of body weight of frog. Digitalis should be preserved in tightly closed containers, protected from light.

It may interest you to know that crude drugs are not usually purchased directly from the countries where they are grown, but are sent to one of the great world-marts, at London, Hamburg or Amsterdam, where the drugs are sorted, assayed, rebaled and labeled. The buyer goes through the vast warehouses, and makes his purchases wholly from the labels or tags, and finds upon delivery here, just what the tag described, as, "excellent leaf;" or, "medium quality, many stems;" or "poor grade leaf, much foreign matter," and so on, the price being influenced by the quality of the drug. Occasionally, the leaf is purchased directly from the farmer, in this country, and certain men market their products in this city, giving a very fresh and dependable leaf.

The commercial, as well as the medicinal value of a crude drug, depends upon the chemical assay of its active principles, as the amount of morphine in a sample of opium; of strychnine in nux vomica; and quinine in cinchona; but, unfortunately, the chemical analysis of digitalis fails to reveal the amount of active principles in an accurate manner, and the subject of a dependable method for chemical assay of this drug is in a state of chaos. It is also impossible to make a relative comparison between a chemical and a biological assay.

The active principles of digitalis are glucosides, which do not have the property of forming salts with acids, like the alkaloids. While some authorities agree that certain glucosides have been isolated, and identified, other investigators claim that often the same product is marketed under one name when it is sold in an amorphous form, and another name when it is sold in a crystalline form. It is generally admitted, however, that digitoxin is the most stable and most powerful glucoside, its dose being 1/480 of a grain. The other glucosides usually mentioned are digitalin, digitalein, digitophyllin and digitonin, the last being a saponin, and although inert as a medicine, is of value, in that its presence makes the other glucosides soluble in water, thus giving the tincture and infusion about the same constituents.

The importers grind the leaves into a powder, and, in cartons, it reaches the retailer, where the tincture, infusion, fluid extract, or pill, is made for the patient, as may be prescribed by the physician. Powdered digitalis varies from forty cents to two dollars a pound, and it is natural to suppose that the bale tagged "poor grade leaf" was the one ground up to sell for the cheapest price, and it is also within the bounds of imagination to think that this particular grade is a popular one. The United States Pharmacopoeia directs that 100 grams of powdered digitalis be placed in a percolator, that a menstruum of three volumes of alcohol and one volume of water be added, and that this be allowed to percolate until one liter is obtained.

Every tincture made this way is supposed to be of standard strength, and is sold as such, but investigation shows that it is rarely found to be so. While the United States Pharmacopoeia provides a biological assay, by the so-called "frog method," to determine the accuracy of the drug and its preparations, we find that there is hardly a pharmacist going to the great expense of having this assay made. A few have done so, and one, to my knowledge, found that his tincture was one and a half times as strong as the United States Pharmacopoeia's, although sold, up to that time, as officially correct.

A sample of the tincture of digitalis, made according to the United States Pharmacopoeia, and used at the Boston City Hospital, was sent to the Department of Pharmacology of the Harvard Medical School, in March, 1922, for a biological assay, which was made by the official "frog method," and the report shows that the preparation was "just under the pharmacopoeial strength, or, as 7 is to 6, in inverse ratio." The difference, although slight, shows that the tincture is somewhat weaker than it should be. At the same time, another sample of the same tincture was sent to the Division of Biological Laboratories, under the Department of Public Health, for assay, and their report reads, that the preparation was at least 25 per cent. stronger than the standard requirement for the official tincture. This assay was made by the Reed and Vanderkleed method, wherein guinea pigs are used instead of frogs. While the frog method is the official one, it is open to criticism, as the United States Pharmacopoeia does not specify the species of frog, and Pratt and Morrison[1] have found the European frog to be more susceptible to a lethal dose of digitalis than the American frog.

A well-known pharmaceutical house admits that it is obliged to spend at least five days in standardizing the frogs, to the temperature, water, etc., before testing the digitalis by the U. S. P. method of assay. Hatcher, who has done much work along these lines, has found the "cat method" to be more dependable than the others, but it is quite probable that an assay of the tincture by this method would show a still different result from the two already reported. For instance, Hatcher and Eggleston,[2] using the cat method, reported results of stability in infusions entirely different from that of Pomeroy and Heyl,[3] who used the frog method. Hale, using the frog method, found that it took 16 times the amount of digitoxin and eight times the amount of digipuratum that Hatcher and Brody[4] required per kilo for a cat.

Another observer, Pittenger, is trying to perfect a method of biological assay which will be inexpensive, practical and accurate. His method calls for 500 cc. of tap water, a few gold fish, kept at 22° Centigrade, and the tincture to be tested. Exhaustive experiments involving the use of over 1000 fish proved the method to be most sensitive, when dilutions were used, which produced death in approximately three hours.

The amount found to be most satisfactory averaged 2.85 mil as the minimum lethal dose, and neither the size nor number of gold fish used nor the alcohol in the tincture seemed to affect the result.

With the present uncertainty of accuracy; with the lack of consistency in reports of the various methods of assay; with the marked differences in opinion, in the minds of our best authorities, as to the present official method; and with the great expense entailed, we can hardly blame the pharmacist for not having his digitalis assayed.

I know that my confréres will bear me out when I say that almost every student, and many practitioners, associate all cardiac conditions with digitalis, and whatever the irregularity, the murmur or symptom, digitalis is at once prescribed.

While it is impossible to discuss the indications of digitalis in each specific case, it should be remembered that although it aids the heart to greater action, by calling on its reserve power, it cannot do the impossible, namely, increase the absolute power of the heart. Again, the dose suitable for certain conditions of heart disease, while the patient is at rest, is not a proper dose for a patient exercising or continuing at his work. The heart will do more actual work, at a slow rate, without exhausting itself, than it will with a rapid rate, which soon wears out the tired heart muscle. Thus, when digitalis is clearly indicated in a case, rest, both physical and mental, is just as surely indicated.

It is very interesting to find that tincture of digitalis is always given in drop doses, and inquiry at many drug stores indicates that 10 to 15 drops two or three times a day is the favorite manner of prescribing it. Many pharmacists dispense digitalis with a red label to impress the patient that he is taking a very powerful and poisonous medicine.

Even when you prescribe minims on your prescription you will almost always find "drops" written upon the label of the bottle, and when it is not changed, the nurse or attendant will administer drops, as they have no facilities for measuring minims.

The difference between what your patient should have taken, when you prescribed 15 minims four times a day, and what he actually did take, is startling, as proven by these vials for a day, a week and a month, showing, in multiples, that there are about two drops to a minim. This vial containing a drachm—that is, 60 minims—measures 128 drops.

The natural tendency of most practitioners is to give too small a dose of digitalis. Ten minims of the tincture has been found to measure from 19 to 25 drops, according to lip of dropper. Four c.c. of the infusion equals eight minims of the official tincture, and many a physician, who would not give 30 minims of the tincture at a dose, often prescribes a dessertspoonful or even a tablespoonful of the infusion every four hours, obtaining a satisfactory result and thus having more confidence in the infusion.

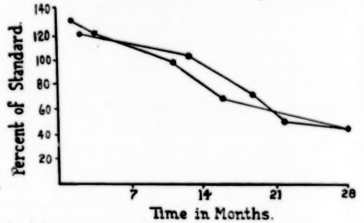
Digitalis should be given in amounts sufficient to cause therapeutic action, then continued for a while with doses capable of sustaining the effect, or omit the drug entirely, repeating dose again, if it is needed.

Deterioration of digitalis is a fact not fully appreciated by the clinician, and explains many of our failures when the diagnosis was correctly made and the treatment apparently administered correctly. Physicians naturally assume that the authorities compel the pharmacists to follow the United States Pharmacopoeia, so wrongly feel that the preparations are always of a standard strength. This is not so. Old preparations of aconite, ergot, squill, strophanthus and digitalis have been found to be worthless by biological assay, although they were made by the official methods.

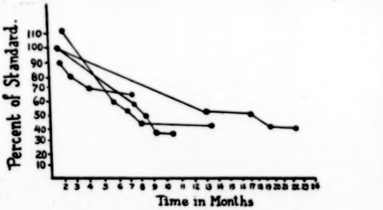
Pittenger,[5] who has done much work on the assay of drugs, has reported that he has made 51 assays of digitalis and that the strength of the tinctures varied from 0 per cent. to 444 per cent.

Very valuable papers on the stability of digitalis leaf extracts were published in the *American Journal of Pharmacy*, by Schmidt and Heyl in 1919 and by Pomeroy and Heyl in 1920, and their graphs and summaries are freely quoted in this article.

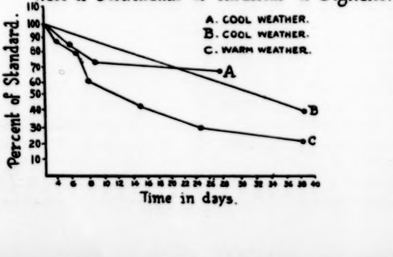
Rate of Deterioration of Digitalis Leaves.



Rate of Deterioration of Tinctures of Digitalis.



Rate of Deterioration of Infusions of Digitalis.



These graphs show a progressive deterioration of digitalis and its preparations, which reach an equilibrium of somewhat marked stability, indicating that the leaf contains a constituent more stable than a second active but unstable constituent which is also present. Digitoxin is undoubtedly the stable and digitalein the less stable part, as proven by the percentage of digitoxin extractable, according to the opinions of these writers. Recently an observer has found traces of an organic acid which seems to be present in freshly made preparations of digitalis, but which disappears at the time our graphs show marked deterioration, probably combining to form some unidentified substance.

Pomeroy and Heyl found that infusions should be discarded in from three to five days' time, and that the addition of alcohol adds nothing to the stability of the infusion.

Assuming that the pharmacist manufactures the amount of tincture mentioned in the formula of the United States Pharmacopoeia, namely, a liter, we might expect some drug stores to have enough made at one time to last several years, and inquiry along these lines shows this to be a fact. If we have been prescribing 10 or 15 drops of tincture of digitalis, and one of these ancient, deteriorated products was dispensed on a case where digitalis was clearly indicated, we can understand our failure to get a satisfactory result.

One firm has tried to prevent the rapid deterioration by placing a certain number of freshly made tablets, of the whole leaf, in a brown glass bottle, to prevent action of the sun's rays; by placing a dehydrating agent under a layer of cotton at the bottom of the bottle, to absorb moisture, and dating the product, thus seemingly giving us a dependable tablet of the whole leaf.

The whole leaf possesses all the valuable properties of digitalis and is the best way of giving this important drug.

Most of the proprietary preparations are either standardized tinctures or are made from the glucosides, usually digitoxin, and while they have their place in medicine, as in intravenous or subcutaneous injections, they are not to be preferred to the whole leaf. Hatcher and Wilbert[6] have compared the action and relative costs of the various proprietary preparations with that of the whole leaf, and in each case the whole leaf, or a tincture or infusion made from leaf of good quality, is preferred, although costing far less. For instance, one costly and well-advertised preparation claims to be a solution of amorphous digitoxin, but no such substance is known to science.

Fat-free tincture is found by the same observers to be a weaker preparation, containing less of the active principles of digitalis, when it is less actively emetic, than the official tincture, and the amount of fat removed is found to be so small that it could not influence the emetic action at all. The difference between the therapeutic and the toxic dose is very slight, and may produce poisonous symptoms without much warning, so it is inadvisable to repeat the maximum dose within six hours, especially by intravenous or subcutaneous methods.

Deterioration of digitalis is further emphasized by the work of E. S. Zueblin,[7] who has experimented a great deal with a fontactoscope, an instrument constructed for the purpose of determining the amount of radio-active rays emitted by radio-active bodies. A specimen of powdered digitalis was examined on three different dates, at an interval of 323 days and again 136 days later. The sample was kept in a sealed bottle, protected from light and moisture. Marked inferiority of the drug was noticed on the second test and again on the third test. While there is no comparison between the physical radiation and the medicinal value of digitalis, it coincides with what we are trying to prove.

The proper use of a drug involves knowledge of a dose sufficient to produce therapeutic action, the rate and manner of elimination from the body, and its toxic effect. We do not know how digitalis is eliminated, as chemists fail to find it in the excreta, so we assume that it is oxidized in the body.

There is no other drug which requires such careful study in deciding upon a proper dose, as age, sex, weight and the pathological condition must all be considered, since an excessive amount will be toxic, while an insufficient amount barely supplies daily waste, thus producing no result. Pardee[8] has found that an adult can safely eliminate 22 minims of tincture daily, and that this amount can be continued over a long period of time, thus keeping up the action desired without fear of toxic action. His work on the isolated heart shows that the whole leaf possesses properties not found in the glucosides.

A single dose of digitalis is rarely fatal in a normal individual. I cannot find a death in our records, and H. C. Wood,[9] a toxicologist of 44 years' experience, knew of only one such case. Hauber of Munich, in 1890, reported such a death, but the fatal dose was not mentioned. That this odd drug has a cumulative effect is very well known, but when this physiological effect is produced, sufficient notice is given by the signs of heart block and by nausea and vomiting. This is due to the effect upon the central nervous system when digitalis is pushed, however slightly, beyond the maximum dose. We should remember that the earlier we recognize the indication for digitalis the more satisfactory the end-result, as old lesions often respond poorly to the use of drugs.

The danger of single massive doses of digitalis must be appreciated, as the ventricle may lose its inhibitory action on the vagus, and the excessive stimulation of systole may cause death. Any degeneration of the myocardium is a contraindication to the use of digitalis.

There are many methods of computing the amount to give in a single dose, but they should never be given, if the patient has taken digitalis or its preparations, for at least two weeks, and it is advisable that an electrocardiogram be taken, to confirm diagnosis and check up the condition of myocardium.

It has long been thought that high temperatures of the body prevent digitalis from acting on the circulatory system, and clinicians have been warned to avoid large doses in the treatment of pneumonia, as a sudden crisis was supposed to admit absorption of an excessively large amount of digitalis, and toxic action would result. Cohn,[10] at the Rockefeller Institute, feels that this is not true, and advises the use of digitalis in the febrile period of pneumonia, as a routine.

If the case is seen early, he gives half a gram on the first and second days, and again on the fifth and sixth days.

If the case is seen on the fourth day of the disease, he gives a gram, repeating a half-gram on the sixth or seventh day. His statistics certainly support his theory, but digitalis has not been given as a routine on the pneumonia service at the Boston City Hospital and we have had comparable results.

Our studies in cardiac work show that syphilis is a far more frequent offender than is commonly supposed, the Wassermann test being positive in about one-fourth of the mitral lesions, in one-half of the aortic cases, and in two-thirds of the aneurysms. While digitalis treatment is not contraindicated in a case having a positive Wassermann, antisyphilitic treatment is indicated. The symptoms of decompensation due to degeneration of myocardium by syphilis, although shown by the usual signs, have a more serious significance than those due to cardiac failure, and the use of digitalis in these cases is questionable, as the condition is due to myocardial degeneration.

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501 Beacon Street.

SUMMARY OF PAPER GIVEN AT THE CLINICAL MEETING OF THE HEART SERVICE, BOSTON CITY HOSPITAL

By William H. Robey, M.D., Boston.

Angina Pectoris with and without Cardiac Signs.

Decompensation of the congestive type with oedema and cyanosis, often with previous signs of heart disease or other attacks of decompensation is quite familiar and time need not be taken to discuss it. I speak particularly to the house-officers of a type of heart failure not so commonly seen in hospital practice which has the symptom known as angina pectoris as its outstanding feature. Osler stated that in a large institution not more than one case of angina pectoris might be seen in a year while a consultant in private practice may see ten or twelve in the same time. That has been my experience. In a ten-year period in this hospital only sixteen cases are recorded. When angina pectoris occurs in a patient with evidences of arteriosclerosis, dypsnoea on moderate exertion or some form of arrhythmia, the diagnosis is often made with ease but when pain about the heart is complained of without evident cardiac or circulatory signs, the diagnosis is often difficult and sometimes impossible. In a young person without physical signs or limitation of cardiac effort, pain is often due to something else and correction of diet, habits of eating, and the bowels, will stop the pain. If aortic disease or mitral stenosis can be demonstrated, then the pain can be explained, as we know that both of these lesions may cause it. In aortic disease the pain is often about the aortic area, and in mitral stenosis about the area of cardiac impulse. It is not one of the common symptoms of these conditions.

If a middle-aged or old person complains of cardiac pain, it should always be taken seriously whether there are signs or not. The history should be most carefully studied, and, if possible, the patient should be seen during an attack of pain. If that is impossible, then a very thorough history should be obtained of how the pain comes, the area of distribution, the appearance of the face as observed by friends, the subsequent fatigue, and, in some, sweating. Sometimes in early cases the attack is induced by exertion. When it comes on after the patient has gone to bed the prognosis has always seemed to me much more serious. The physical examination should be most searching. An accentuated aortic second and a shortening of the first sound will be of greater value than the finding of a murmur. The rate and rhythm should be observed with care. While the electrocardiogram has not given any positive evidence as yet of coronary disease, the heart should be studied electrocardiographically when possible. A very mild case is now under my observation. A man of 62 years, but looking 10 years younger who has had attacks of substernal pain localized pretty definitely at the third space and radiating to the arms and fingers; a man of good habits, without history of venereal disease and with a negative Wassermann. The pain was first noticed three years ago after climbing a small hill, and occurred at intervals following exertion for some months. It then disappeared for a year and a half and during this time the patient felt as well as ever. It occurred again a year ago, after he had carried a piece of furniture upstairs. The pain disappeared, but in the last two months it has been more or less evident after walking or going upstairs. Recently it has occurred several times just after going to bed. He has been seen twice by a competent physician, who, not finding any evidence of cardiac disease, has told him the pain is of no consequence. The physical examination of this patient is essentially negative, Wassermann negative, blood pressure 140-100. Heart is normal in size by percussion and the fluoroscope; the great vessels are normal; pulse 76; no arrhythmia, no palpable atheroma. There is an accentuation of the aortic second and a soft blowing systolic murmur. In the x-ray plates at about the third space on each side of the sternum and in the area where the patient complains of pain is an irregular hazy shadow which does not seem to be connected with the heart or great vessels, and which raises the question of the presence of a neoplasm. In view, however, of the rather long history of the case, the splendid general condition, and the lack of physical signs which one would expect to accompany a mediastinal growth, it would seem that such a diagnosis is unlikely. My belief is that this presents the pain of an early coronary sclerosis, and if the patient is careful about exertion I think his attacks may quiet down completely. There is always, however, in such a case the possibility of sudden death, as most of us know by experience.

Another example of the type of case of angina pectoris which may exist without any symptoms whatever referable to the heart is illustrated in the following history:

A man 47 years of age, whose father had died at the age of 71 of angina pectoris, gave a history of freedom from serious infections and was not aware of having contracted any venereal disease. Five years before I saw him he had a pain in the chest radiating to both arms. This condition repeated itself several times and was followed by a year and a half of complete freedom. Five months after I saw him the attacks began again following exertion of any kind, and frequently came on in the early morning after a satisfactory sleep. He had used alcohol moderately and smoked fifteen cigarettes a day. His appetite was extremely good. There was no nocturia. The attacks of pain were intense, located underneath the sternum and radiating to the shoulders, back and arms. The attack would last sometimes for half an hour, at the end of which time the patient was utterly exhausted and covered with profuse perspiration. He had seen a number of physicians; first, a gastro-enterologist, who had put him through all of the gastro-intestinal tests, with negative findings. He was then under the care of a neurologist for several weeks, who treated him for a neuritis of the left arm. At the time I saw him the physical examination was quite negative. There were no abnormal sounds in the heart. The aortic second was not accentuated, the blood-pressure was normal, the pulse was not atheromatous. The x-ray plates of the heart showed the heart and great vessels were normal. The Wassermann test was negative. An elecrocardiogram showed an inverted T wave in leads 2 and 3. The patient was kept in bed at complete rest, and was given antiluetic treatment, notwithstanding his negative Wassermann and sedatives in proper quantities to relieve pain. In spite of this, he continued to have attacks and died suddenly one month later. It is evident because of the almost complete negative findings in the heart and blood-vessels that this patient's condition had existed for several years without diagnosis, and was attributed to the stomach and nerves, but never to coronary disease.

Pain, breathlessness or easy fatigue on exertion are the three outstanding signs of a heart that may soon fail. No matter how slight the physical signs may be in a middle-aged or elderly person the onset of any of these symptoms, alone or in combination, should make the physician cautious. A colleague of mine recently examined a man's heart, pronounced it normal, and told him he might take an extensive trip. When in the far west, he collapsed, was examined electrocardiographically and found to have some form of block. He revived in the hospital, but died a few weeks later. The fact that this patient was frequently awakened in the night with attacks of breathlessness was not brought out at the original examination. We must all be very careful not to overlook important points in the history as well as in the examination.

In the treatment, rest, and sufficient study by all possible means during rest, should be carefully carried out. After rest, a study of effort tolerance should be made. Digitalis, even in the presence of a normal rate and rhythm, is a very excellent addition, provided a potent preparation of digitalis is used. Nitroglycerin, even when the pressure is not high, is often beneficial. Amyl nitrite will generally relieve acute attacks of angina pectoris. It removes the danger and dread of the pain. The diet and bowels should be carefully regulated. Worry is often as large a factor as exertion. Sleep is an important aid which is too frequently overlooked. Morphia alone or in combination with some drug such as five grains of veronal or ten grains of chloral will frequently give a restful night. Explain to some trustworthy relative how important you think the condition is.

ORGANIZATION OF HOSPITAL AND MEDICAL SERVICES—BUFFALO.

Buffalo, N. Y., June 24, 1922.

To the Editor:

Herewith is sent an important report on the organization of the hospital and medical services of the municipality of Buffalo, prepared by Doctor Haven Emerson of New York at the request of a Citizens' Committee of Buffalo. The Department of Hospitals and Dispensaries of this city having been attacked for inefficiency and maladministration by the Mayor, a committee of 132 citizens felt it proper that a medical expert of national reputation should be called in to make an impartial survey and report.

The facts presented contain many points of general interest. The report goes beyond a mere description of conditions in Buffalo, indicating principles and methods of hospital service, and for the organization of the sources of a large community for the cure and prevention of disease. We regard this report as a contribution to standards of hospital work and the advancement of medical service through providing practising physicians with diagnostic facilities for their patients.

The Citizens' Committee, therefore, has felt that it would be of interest to the general public, and in particular to the physicians and health workers throughout the country. With this in view, an abstact has been prepared bringing out these main points, which accompanies the copy of the report herewith.

William Warren Smith,
Chairman, Citizens' Committee.

White Building, Buffalo, N. Y.

The report presents the following features:

First—The practical withdrawal of the Mayor's attack.

Second—The organization of the committee and the employment of Dr. Haven Emerson to make a survey and render a report.

Third—Dr. Emerson's report is to the effect that "the Department of Hospitals and Dispensaries of Buffalo has not only emerged unscathed, but with flying colors." Then follows a brief historical sketch of the development of the present hospitals and dispensaries, showing the Buffalo City Hospital 415 beds, the Municipal Hospital 175 beds for tuberculosis and venereal diseases, the Ernst Wende Hospital 140 beds for other communicable diseases, seven health centre dispensaries and a mental disease clinic. In addition to the facilities afforded by the Department of Hospitals and Dispensaries there is the J. N. Adam Memorial Hospital for tuberculosis 350 beds and the Erie County Hospital 300 beds. Privately controlled institutions have an aggregate capacity of 1788 beds, making a total of 3168 available for the city of Buffalo with a population of 506,775, or for Erie County with 650,000.

Standards of hospital service to the community as represented by hospital beds have been worked out by Dr. Emerson and others, and as applied to Erie County would appear as follows:

Kinds of Service.	Number of beds usually needed for 100,000 people.	Needed in Erie County (population 650,000)	Beds provided in Erie County (per 100,000).	Provided in Erie County (population 650,000).
General Medical and Surgical Care	500	3,250	334	2,169
Children	50	325	49	319
Maternity Cases	15	98	37	241
Acute Communicable	50	325	21	135
Tuberculosis	92	600	132	862
Convalescent Care (per 1,000 hospital cases)	7	7	...	...
	707	4,598	573	3,726

Even with these facilities there will be serious lack of provision for convalescent care and deficiency in the number of beds for contagious diseases. The general health programme also needs prophylactic dental care, occupational therapy in the hospitals, and nurses in the District Nursing Association who will attend confinement cases under direction of physicians.

The general arrangement and scope of work done in the hospitals at present is commended and figures are given which demonstrate efficiency. The report presents the following criticisms and suggestions:

"It would appear in Buffalo that there is lacking that spirit of professional fellowship and mutual confidence and respect which must be created and cultivated if the five medico-social professions—medicine, nursing, pharmacy, dentistry and social service—are to achieve the results the community has a right to expect, and each develop within its own special field to its full possibilities without sacrifice of the independence or adequate financial emoluments of any one of these necessarily allied professions.

"It is believed that once the public recognizes the need for adequate social service and the physicians accept this new group of associates as trusted allies, the present roughness and mistakes due to misunderstanding and insufficient support will largely disappear.

"It must be a matter of common knowledge among physicians of Buffalo as it is elsewhere that the great reduction in the incidence and deaths from preventable diseases during the past twenty years has been the main factor in altering the character of medical practice and changing the courses of income."

To meet this situation Dr. Emerson makes a number of recommendations, such as further careful study of all public and private health activities, with special reference to tuberculosis, a central association of all the hospitals for the discussion and establishment of common hospital policies, and also to provide for economy through central purchasing, and finally to meet the main need there is recommended a permanent Public Health Committee. On this should be represented the medical profession, also public and private groups interested in health problems; labor, business men, and other citizens. The temporary citizens' committee under whose auspices the investigation was conducted furnishes a nucleus for such an organization. A standing committee of this kind would, it is believed, bring together the points of view of groups that now fail of mutual understanding and tend towards the permanent advancement of medical work and of the larger interests of the community in health and general welfare.

The whole report is a valuable contribution to recognized problems in hospitals and other health service to communities and could be studied to advantage by officials in very many localities.

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Book Review.

A Treatise on Glaucoma. By Robert Henry Elliott. Oxford Medical Publications: 1922. 656 pages.

The second edition of this very excellent work now appears after four years, in a more pretentious form, a treatise instead of a textbook.

Glaucoma, it may be said, is one of the most serious problems which confront the ophthalmologist today. It forms one of the principal causes of blindness, a considerable percentage of which might well be avoided if the ophthalmologist were thoroughly conversant with and carried into practice the advances that have taken place in the knowledge of this disease. Colonel Elliott has performed a service to medicine in collecting in this book all that is known of glaucoma up to the present time. It is the best treatise which has appeared on the subject and as such it is recommended to our ophthalmologists for careful perusal and digestion. The second edition has been enlarged in all its parts. We notice many new illustrations, many additional references and an increase of over one hundred pages of subject matter. Only the more important advances can be touched upon.

The important paper of Fuchs on the anatomical variations of lamina cribrosa is noted. In the section on intra-ocular pressure and tension a large amount of new material has been incorporated, especially in regard to the systolic and diastolic pressure in the retinal artery, thus the researches of Magitot, Baillart and others are recorded, but the author rightly concludes that along this line the discussion is still in the theoretical stage and that we must "let our theory building wait on further development of our knowledge." Nearly fifty pages have been added to the section on diagnosis.

The author's discussion of the true and false glaucomatous halos are most interesting and the measurements of this feature are valuable. The increase of pigmentation in the iris tissue as seen with the slit lamp and noted by Koeppe is mentioned, but no judgment as to its value can yet be given. There is need for a more acceptable method of measuring the corneal diameter and a new Zeiss instrument for this purpose is described. Elliott's careful consideration of the features of the glaucomatous field, the most important single sign in making the diagnosis of the disease and estimating its progress, is well done. The jagged scotomata which he describes as the Elliott sign can hardly be accepted without corroboration and must be regarded as rather fanciful. This sign suggests the cubist influence in ophthalmology. Also the improvement in the field following operation which he speaks of so constantly would seem to be overemphasized.

The writer does not endorse the previously accepted view that operation when the field is cut almost to the fixation point is likely to be followed by loss of central vision. One can hardly agree with his condemnation of the practice of permanent dilatation of the pupil in cases of central opacity of the lens on account of the dangers of rise of tension. True it is that the tension should be carefully measured before advising this procedure.

There is a good historical résumé of glaucoma operations and a handsome tribute is paid to Lagrange for his pioneer work in the development of the modern decompression operation.

The Lagrange operation is, however, hardly brought up to date and the old plates are figured.

Elliott gives a detailed and thorough description of the very valuable and popular operation that bears his own name. There are valuable sections dealing with secondary glaucoma, congenital glaucoma, and the book ends with a chapter on the pathology of filtration.

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Current Literature Department.

ABSTRACTORS.

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Pancreatic Extracts in the Treatment of Diabetes Mellitus.

Banting, Best, Collis, Campbell, and Fletcher (*Can. Med. Assn. Jour.*, vol. xii, No. 3, March, 1922) review the important literature on attempts to use pancreas and pancreatic extracts in the treatment of diabetes, and describe their own method of getting active pancreatic internal secretion by (1) ligating the pancreatic duct and removing the gland ten weeks later, when the acinous tissue has degenerated, leaving the insular tissue intact; (2) the use of pancreas from fœtal calves under five months, in which proteolytic enzymes had not yet developed; (3) the use of a sterile extract of whole gland prepared by a method yet to be published and one that is potent but not yet satisfactorily purified.

These were first used satisfactorily on diabetic dogs, then the purified extract was used on seven patients with marked results: a marked fall in blood sugar occurred; in two cases repeatedly examined, the respiratory quotient rose along with the return to the normal blood sugar level, indicating an increased utilization of the carbohydrate; the sugar excretion showed marked decrease, or if the dosage was adequate, disappeared; ketonuria ceased. In agreement with previous observations of others on laboratory animals, it was found that without careful control severe toxic reactions were sometimes encountered, and this will undoubtedly be a factor in the evaluation of the ultimate therapeutic utility of the method. They give tables and charts from which their deductions are drawn.

[A. W. C.]

The Blood Cholesterol, Its Importance and the Value of Its Determination in Cancer Research.

Luden, Georgine (*Can. Med. Assn. Jour.*, vol. xii, No. 3, March, 1922) concludes as follows: Cholesterol is an important constituent of the blood. There is evidence that the blood cholesterol plays an important part by promoting cell proliferation and combating bacterial invasion. The test for blood cholesterol is not a diagnostic one, but it furnishes valuable information concerning the efficiency of cholesterol metabolism. The activation of cholesterol metabolism after radium treatment demonstrated by the blood cholesterol determinations, and the parallel improvement of patients suffering from malignancy indicate that there is an intimate connection between disturbances, cholesterol metabolism and malignant disease. Cholesterol metabolism can also be improved by dietary measures, suggesting that beneficial effects may be expected from dietary measures tending to reduce the cholesterol intake with the food, combined with radium therapy. Since the life of the cells depends upon their blood supply, the chemical composition of the blood must be equally important; radium treatment changes the chemical composition of the blood, as is shown by blood cholesterol determinations. Spontaneous cures have been observed in well-authenticated, inoperable, "hopeless" cases of cancer: this proves that the body can wage a winning fight against malignant disease; as therapeutic measures had proved ineffective in these cases, some internal readjustment must account for the cures. Chemical investigations will solve the cancer problem by revealing the nature of this internal readjustment.

[A. W. C.]

The Nature and Cause of Old-Age Enlargement of the Prostate.

Walker, K. M. (*British Medical Journal*, Feb. 25, 1922), discusses the cause of enlarged prostate in old men, summarizing his remarks as follows:

1. It is impossible to explain enlargement of the prostate by any theory of chronic inflammation alone.
2. Although enlargement may reproduce conditions favourable to the development of a neoplasm, the enlargement itself does not come into the category of true tumors.
3. The condition is in the nature of a fibro-epithelial degeneration, which finds its analogy in the female in sero-cystic disease of the breast.

4. This degeneration may be regarded as an accident occurring during the progress of involution of the genital tract.

5. The cause that determines the onset of the condition is unknown, although it is not improbably connected with a loss of endocrine balance occurring during this period.

6. Prostatic enlargement shows a definite distribution that is anthropological rather than geographical in character. It very rarely occurs amongst Mongolians and Negroes.

[J. B. H.]

METABOLISM OF CHILDREN UNDERGOING OPEN-AIR TREATMENT, HELIOTHERAPY AND BALNEOTHERAPY.

HILL, L., and CAMPBELL, J. A. (*British Medical Journal*, February 25, 1922), discuss this important subject of the results of open-air treatment, sunlight treatment and bath treatment of children with particular reference to metabolism. His remarks, which are of interest and value, are summarized as follows:

1. Observations during the past summer on metabolism of children crippled with surgical tuberculosis and lying fixed in splints in bed and more or less nude, at Lord Mayor Treloar's Hospital, Hampshire, are described. Their metabolism on the average was increased 40 per cent. above the standard, for the same weight, of children confined in a closed calorimeter.

2. After three months' treatment, including graduated exposure to open air and heliotherapy, their metabolism out of doors was 20 per cent. above that in well-ventilated cubicles soon after admission.

3. Children who had been treated for many months showed high metabolism in the out-of-door conditions, those who pigmented well in the sun giving about the same figures as those who did not pigment well, after making allowance for weight. The former gave the better figures for weight.

4. It is considered that the rise in metabolism caused by heliotherapy *per se* is insignificant compared with that caused by exposure to open air. At the same time the value of heliotherapy as a factor towards arrest of the disease is not disputed.

5. Children on admission in well-ventilated cubicles gave results about 20 per cent. higher than basal standards for closed calorimeters. It is considered that the open-air conditions in the former were mainly responsible.

6. Balneotherapy increases metabolism much above the resting level.

7. The bodily tone and general condition of the children under the specially graduated treatment is remarkable when the long period of immobilization in splints in bed is considered. The treatment might be applied with advantage in other cases involving long confinement in bed.

[J. B. H.]

THE NATURE AND SIGNIFICANCE OF HEART SYMPTOMS.

MACKENZIE, J. (*British Medical Journal*, April 1st, 1922), in this paper discusses the stimuli concerned in the heart beat, summarizing his remarks as follows:

1. The stimulus for the normal rhythm of the heart arises in tissue specially evolved for the purpose. The stimulus in auricular fibrillation arises in tissue specially evolved for contraction, the stimulus production being merely an incident of the contraction.

2. There is a remarkable difference between the rhythms which arise in the conducting and contracting systems of the heart, due to the difference in the stimuli. These differences are shown especially in the response of the ventricle. The ventricular systole in the normal rhythm, as well as in those rhythms arising in any part of the conducting system, is complete and effective.

3. The ventricular systole, when the stimulus arises in the muscle cells of the auricle, is often partial and ineffective, and when it arises in the muscle cells of the ventricle it is always ineffective.

4. When the contraction starts in the muscle cells of the auricle, as in auricular fibrillation, the stimulus which arises is much more sensitive to agents which favor or retard its passage to the ventricle.

5. The effect of digitalis is strikingly different, it having a far greater effect on auricular fibrillation and flutter and on the idioventricular rhythm than on any rhythm arising in the conducting system.

In the *British Medical Journal* of April 8th, 1922, Dr. Mackenzie takes up the reflex process and the heart beat, summarizing as follows:

1. The mechanism concerned in regulating the heart beat belongs to the vital process included under the term "reflex".

2. The cells taking part in this mechanism belong to two groups: an extrinsic, connected to the nervous system by the vagus and sympathetic nerves, and an intrinsic, which includes the sino-auricular and auriculo-ventricular nodes, and the Purkinje cells in the bundle and auricles and ventricles.

3. Agents of disease (toxins) which modify the rate and rhythm act on different parts of this mechanism, and certain disease agents produce characteristic effects.

4. Drugs that influence the rate and rhythm of the heart act in the same way, some of them also producing characteristic effects.

5. As toxins act on the same parts as drugs the effects of drugs will be modified by the effects of the toxins.

6. Before the effects of a remedy can be investigated it is necessary to know if the toxins have not already produced an effect which will interfere with the action of the remedy.

7. The kind of knowledge which disturbances of the reflex process reveals is limited to the variations in rate and rhythm, and they give no information regarding the functional efficiency of the heart.

[J. B. H.]

"PERNICIOUS ANÆMIA" AND "SEPTIC ANÆMIA."

HUNTER, W. (*British Medical Journal*, March 18, 1922), discusses pernicious anæmia and what he calls septic anæmia as an independent anæmia and as a complication of pernicious anæmia. He presents various illustrative cases and an elaborate bibliography. His article, however, is not particularly conclusive.

[J. B. H.]

MINOR DISPLACEMENTS OF THE UTERUS AS A CAUSE OF DISABILITY IN WOMEN.

FAIRBAIRN, J. S. (*British Medical Journal*, April 15, 1922) discusses what he calls the minor displacements of the uterus, summarizing his remarks as follows:

1. Always look beyond the mere position of the uterus and do not ascribe symptoms to retroversion.

2. In retroversion accompanying pelvic floor prolapse, subinvolution, pelvic inflammation, and tumors, the disability is due to the primary condition and not to the position of the uterus.

3. Retroversion after child-bearing with subjective symptoms of prolapse is correctly treated by replacement of the uterus and a pessary, provided the relief of fatigue is also secured and attention paid to the general health, mental and physical, and to the improvement of the abdominal and pelvic muscles.

4. If recovery does not follow after six to twelve months, operative measures will give better results than continued pessary treatment, and probably perineal repair and plastic vaginal operations will be more satisfactory than those of the hysteropexy type.

[J. B. H.]

THE VALUE OF THE COMPLEMENT FIXATION TEST IN THE EXCLUSION OF ACTIVE PULMONARY TUBERCULOSIS.

PUNCH, A. L., and GOSSE, A. H. (*British Medical Journal*, April 1st, 1922), present a record of twenty cases in which pulmonary tuberculosis was suspected and in which the complement fixation test was of value in proving that it was not present in any active form. They discuss this general subject and on the whole are of the opinion that this test is of distinct value in ruling out active pulmonary tuberculosis.

[J. B. H.]

PNEUMONIA NEONATORUM.

BROWNE, F. J. (*British Medical Journal*, March 25, 1922), discusses pneumonia of the newly-born infant, concluding as follows:

1. Pneumonia is a common cause of death amongst infants during the first week after birth, and accounted for 21 deaths out of 80, or 26 per cent.
2. It is sometimes due to ante-natal infection from premature rupture of the membranes, and the infant may be not only infected but also suffering from an advanced stage of pneumonia before its birth.
3. In the infant there is little defensive reaction as compared with the adult against the infecting agent.
4. Pneumonia in the first few days of life is an extremely insidious disease, generally presenting no characteristic symptoms which might lead to its presence being suspected and the carrying out of physical examination.
5. Even at *post-mortem* examination the presence of the disease *may* be missed if microscopic examination of the lungs is not carried out.
6. "Acute hæmorrhagic pneumonia of infants" forms a distinct clinical and pathological entity which gives rise to sudden death in children who may be apparently previously healthy, either full-time or premature. It follows acute congestion of the lungs, the fragile vessels in the alveolar walls rupturing and flooding the alveoli and bronchi with blood. The sudden death is preceded by epistaxis and blanching of the skin, and the etiological factor may be organismal or possibly of the nature of an immediate anaphylactic reaction.
7. The importance of avoiding premature rupture of the membranes during labor, and of taking every precaution to safeguard the newly-born infant against infection, cannot be over-emphasized.

[J. B. H.]

STUDY IN EXPERIMENTAL RICKETS.

POWERS, G. F., ET AL. (*Johns Hopkins Hospital Bulletin* April, 1922) contribute another article excellently illustrated on experimental rickets, summarizing their opinions as follows:

1. The object of the experiments was to determine whether or not radiations from a mercury vapor quartz lamp prevent the development of rickets in the rat.
2. A diet was employed which at room light regularly gives rise to a disease identical in its essential features with rickets as seen in the human being. The diet was high in calcium, low in phosphorus, and was insufficiently supplied with fat-soluble A. In other respects it was well constituted.
3. Nineteen rats were placed on the diet. Ten were exposed to radiations from a Hanovia "Alpine" mercury vapor quartz lamp for varying periods of time daily over a period of sixty-four days. Nine rats were kept under conditions of ordinary room light as control animals.
4. One of the control animals was killed after thirty-eight days; another after fifty-eight days, and the remaining seven after sixty-four days. All of these animals showed gross and microscopic evidences of rickets.
5. The ten rats exposed to the radiations from the mercury vapor quartz lamp were killed after sixty-four days. These animals were free from rickets, both grossly and histologically.
6. The beneficial effects of the radiations from the mercury vapor quartz lamp were not limited to the skeleton, since the condition of the rayed animals underwent a general improvement.
7. The effects of the radiations of the mercury vapor quartz lamp on the growth and calcification of the skeleton of the rat and on the animal as a whole seem to be similar to, if not identical with, those brought about by direct sunlight and by cod-liver oil.

[J. H. B.]

X-RAYS IN DERMATOLOGY.

SEMON, HENRY C. (*The Practitioner*, April, 1922) gives an interesting and practical summary of diseases of the skin which he believes will be benefited by x-ray treatment. He summarizes his remarks as follows:

"If the reader will resurvey the dermatological conditions that have been labelled in this article as amenable to treatment by radiotherapy, he will be struck by the extremely interesting fact *that not one of them is a dermatosis in which hyperaemia is an outstanding feature*. This negation can be balanced by an equally important affirmation, viz., that each and all of them are the result, in some measure, at least, of *active cell growth*, it may be more or less simple hypertrophy as in warts, or hypertrophy and dystrophy combined, as in psoriasis and chronic eczema.

"It thus becomes evident why diseases such as rosacea and acute lupus erythematosus are refractory, and may be seriously aggravated by x-rays. They are hyperaemic conditions, subacute in type, and only resulting in hypertrophy in exceptional cases, and after long duration.

"A consideration of these data will enable even the inexperienced to recognize the type of case which is most likely to respond favourably, and will help him to realize the limitations and contra-indications of this most potent therapeutic weapon." [J. B. H.]

SOME REMOTE EFFECTS OF TONSILLITIS.

PAVEY-SMITH, A. B. (*The Practitioner*, April, 1922), discusses the remote effects of tonsillitis and recapitulates his opinion as follows:

1. The tonsil can act as a primary focus in the production and maintenance of certain systemic diseases.
2. Its condition when infected may be so latent, its past history so blameless, and its power for evil so great, as "to deceive the very elect."
3. As soon as such a tonsil is condemned it should be removed without delay. [J. B. H.]

ON PUBERAL MAMMARY HYPERTROPHY.

GREIG, D. M. (*Edinburgh Medical Journal*, April, 1922), discusses the subject of hypertrophy of the breasts during the age of puberty. He presents in tabular form a list of previously reported cases and discusses treatment. He believes that this condition is a disease by itself with distinctive symptoms, running a definite course, urgently necessitating definite surgical procedure. [J. B. H.]

CHRONIC INTESTINAL STASIS.

LANE, W. A. (*The Practitioner*, May, 1922), emphasizes his already well-known theories in regard to chronic intestinal stasis and its treatment, still maintaining that operative methods are the only rational means of treatment. He admits, however, that there are many subjects in whom the condition is beginning, or is not advanced, for whom it is possible to advise a system of medical and other treatment to obviate the course of operative measures. [J. B. H.]

A METHOD OF USING TUBERCULIN.

ROBERTSON, R. (*The Practitioner*, May, 1922), is an enthusiast in the use of tuberculin for the treatment of tuberculosis of the lungs as well as in glands and bone and joint affections, invariably using a mixed bovine and human tuberculin. This article is of interest as showing how far an enthusiast along one line can blind himself to the value of other methods of treatment and to the limitations of his own particular pet method. What he says should be taken as a guide of what not to do rather than the reverse. [J. B. H.]

A NEW IMMUNIZING TUBERCULOSIS VACCINE: RESULTS OF TREATMENT.

RAW, N. (*The Practitoner*, April, 1922), reports the results of his treatment of 88 cases of tuberculosis with a new form of tuberculin. This vaccine, or tuberculin, prepared as it is from an avirulent culture, can be used with complete safety, and at any stage of the disease, and even in the advanced cases he claims to have seen great relief from night sweats and other toxic symptoms.

Nathan Raw is widely known as a tuberculin enthusiast, and as such has done valuable work. I believe it to be distiactly unfortunate, however, to emphasize in the minds of the general medical public any one method of treatment such as this. [J. B. H.]

NEW TREATMENT OF GONORRHOEAL RHEUMATISM.

ROSS, A. O. (*Edinburgh Medical Journal*, May, 1922), writes an enthusiastic report of the results of his treatment for gonorrhoeal rheumatism, consisting chiefly of the intravenous injection of a preparation known as Electrargol. He reports remarkably good results in five cases, and believes that, given as he advises, it appears to be a specific in relieving pain and reducing inflammation. Bad effects are purely ephemeral. Along with this treatment, prostatic massage and vaccine therapy will be of assistance. [J. B. H.]

THE COMPLEMENT-FIXATION REACTION IN TUBERCULOSIS.

SMITH, A. N. (*Edinburgh Medical Journal*, May, 1922), in an article continued from the previous number of the Journal, concludes as follows concerning the value of the complement-fixation reaction in tuberculosis:

1. In a clinically suspicious case, where the Wassermann is negative, a positive complement-fixation reaction is strong presumptive evidence of tuberculosis.
2. In a clinically tuberculous patient, a positive reaction denotes activity of the lesion.
3. *Repeated* negative reactions may be taken to indicate either the absence of tuberculosis, or that a lesion previously active has become inactive. A *single* negative is of little or no value in a clinically suspicious case.
4. The reaction may be negatve in far-advanced cases dying of the disease.
5. A positive reaction is most likely to be found in patients where the presence of tubercle bacilli in the sputum, or the clinical signs and symptoms render the test unnecessary for diagnosis.
6. Non-specific fixations may occur, notably where the serum gives a positive Wassermann reaction.
7. The intensity of the reaction seems to bear no relation to the patient's power of resistance or to the degree of severity of the infection. [J. B. H.]

SOME POINTS IN THE DIAGNOSIS OF LATE HEREDITARY SYPHILIS.

BEESON, B. BARKER (*Illinois Medical Journal*, Sept., 1921). There are contained in this article discussions on the various means of diagnosing late hereditary syphilis. The author differentiates three means: by general physiognomy examinations, by the Wassermann reaction, and, in doubtful cases, with negative Wassermann reactions, by the therapeutic test. The following conclusions are significant:

1. Late hereditary syphilis is a remarkably protean affair, and may simulate, as does the acquired form, any known disease.
2. There are certain stigmata, such as the Hutchinson triad, the sabre-like tibia, the natiform skull, and the peribuccal scars, which may be said to be almost pathognomonic of that disorder.
3. From the standpoint of late inherited neurosyphilis, the presence of the Argyll-Robertson pupil, as well as absence of the patellar and tendo Achillis reflexes, are of extreme importance.
4. The Wassermann reaction is a valuable aid, but should not be permitted to displace sound clinical judgment. It should be regarded as a valuable symptom when present. Its reactivation is also possessed of a certain value, but, like the Wassermann, does not possess an absolute value.
5. The therapeutic test has been and remains a tried and true friend.

SERIES ON PRACTICAL OBSERVATIONS IN SYPHILIS BEGINS.

HAGEN, H. H. (*American Journal of Syphilis*, Jan., 1922), begins the first of a series of articles on the practical observations in syphilis. The author is emphasizing in this series the practical application, with the set purpose of instructing the general practitioner who is occasionally called upon to handle syphilis. The first article consists of three sections: Introduction, Etiology and Clinical Course. The discussion is thorough and uninvolved, and gives evidence of unquestionable value to the literature on syphilis.

PAY CLINICS FOR VENEREAL DISEASE.

THOMSON, ALEC N. (*Modern Hospital*, March, 1922), says the pay clinic was established for the accommodation of those venereal-disease patients who were too poor to afford treatment by a well-qualified practitioner, and yet were economically above those who were admitted to dispensary service. At present, even though they are entitled to dispensary service, they do not want to avail themselves of what they term "mere charity."

The theory upon which the pay clinic is based is better specialized medical service within the reach of the average individual. The need for low-cost and high-grade service is especial in the case of the venereal diseases. With proper personnel, ethical publicity, social viewpoint, public-health ideas, and modern professional procedure, a clinic can be maintained to treat those individuals who can receive treatment in neither the dispensary clinic nor from the private specialist.

The pay clinic is by no means a competitor of the private physician. Not over two per cent. of its patients could afford private treatment. Private treatment costs from $300 to $400 per year, whereas the pay clinic affords equivalent treatment for $100 to $125. This rate, which is a considerable saving for the patient on the one hand, affords the physician a reasonable compensation for his services. He gets for his clinical work $5.00 an hour, working six hours a day, six and one-half days a week. This amounts to $10,000 a year, full-time schedule, a net income greater than the average medical man's grand total with uncollectible bills included. He can afford to devote some hours a week upon a purely selfish basis.

From the inception of the pay clinic, it has developed along various lines in various places. Some have been affiliated with hospitals or dispensaries, such as the Boston and Brooklyn dispensaries. Others are separate entirely. It is the latter type which is growing more popular.

Group medicine frequently resolves itself, in the final analysis, into the private pay clinic. Hitherto nothing better has been offered. It can administer salvarsan for $5.00 and compensate the administrator. This cannot be accomplished by the private physician. The business principle of reducing cost as the volume of production increases applies, with certain modifications, to medical practice.

Hemolyzing Test for Drugs.

Peyser (*Wien. klin. Woch.*, March 9, 1922), from Hamburger's pediatric clinic at Groz, reports a series of experiments on hemolysis as a criterion for the infiltration formation of drugs. He finds a parallelism between hemolysis and tendency to infiltration formation, except in the case of salvarsan, and concludes that in testing new pharmacological preparations hemolysis indicates the probability of infiltration formation on subcutaneous injection. [R. M. G.]

Chronic Bacillary Dysentery.

Kling (*Wien. klin. Woch.*, March 16-23, 1922), in a continued article, presents a clinical study of chronic bacillary dysentery and colitis gravis, reporting 18 cases of chronic colitides. He believes these conditions due to many factors of causation combined with constitutional or accessory phenomena which depress the tendency to recovery. [R. M. G.]

Salvarsan Dermatitis in Antiluetic Treatment.

Kloor (*Wien. klin. Woch.*, March 23-30, 1922), in a continued article, reports from Finger's skin clinic at Vienna a series of 33 cases of dermatitides following salvarsan administration. He finds these occurring predominantly in women, a result which agrees with the statistics from Köln. [R. M. G.]

Blackwater Fever.

Roy (*Ind. Med. Gazette*, March, 1922) describes blackwater fever as it occurs in the Duars, India, and his treatment of the same. The disease is preceded by a malarial attack and generally develops in the course of one. It is frequent in the rainy season which corresponds with the malarial season of the place. The onset is with a chill, sometimes a severe one, which may be followed by others. Fever is very irregular, ranging from 98° to 104°. The urine becomes dark at the very beginning, and varies in color from port-wine to black, according to the severity of the case, being darkest at the time of a chill. The quantity of urine diminishes and micturition is frequent and uncomfortable. Jaundice is usually present, varying from slight coloring of the conjunctivae to keep icterus of the whole body. Vomiting sometimes occurs and may be very troublesome. In severe cases delirium and incontinence are not uncommon. In fatal cases, death usually comes from sudden heart failure, although death in coma occasionally occurs.

The writer gives his patients a preliminary calomel purge. The following mixtures are then used.

1. Soda Bicarb., gr. x; Soda Citrate, gr. x; Potass. Acetate, gr. x; Potass. Bicarb., gr. x; Liquor Ammon. Acetate ʒ ii; Tr. Strophanthor M v; Water, ad ℥ i (one dose).

2. Extr. Cassia Beareana liq. ʒ ss; Liquor Strychnine, M v; Water, ad ℥ i (one dose).

These mixtures are used alternately every three or four hours, according to the severity of the case. In addition, one pint of salt solution is given by rectum every four hours. If the urine becomes very scanty, hot fomentations are applied over the kidneys. Soda water is given freely. Quinine in full doses is given if fever persists after hemolysis, and all other symptoms have subsided. Absolute rest in bed is necessary, as sudden heart failure is a very real danger. [L. D. C.]

Resection of the Lung for Suppurative Infections with a Report Based on 31 Operative Cases in which Resection was Done or Intended.

Lilienthal, Howard (*Annals of Surgery*, March, 1922), writes as follows:

Chronic pulmonary suppurations, wholly or partially of the bronchiectatic type, are rarely curable without the extirpation of the pathological focus.

The surgical removal of a single pulmonary lobe for chronic pus infection has a mortality of about 42 per cent. The danger is much greater when more than one lobe is infected, or in the presence of other complications.

Remissions of weeks or even months may occur spontaneously.

Palliative operations may be followed by improvement, rarely by apparent cures.

The commonest cause of the disease is infection due to the aspiration of infected material during tonsillectomy.

Radical operation should not be undertaken short of several months after the onset unless the disease is obviously spreading. The proper type of operation should be determined only on full exposure by thoracotomy. [E. H. R.]

The Pathology of Lung Suppuration.

Aschner, P. W. (*Annals of Surgery*, March, 1922), states that lung suppurations may be divided into:

1. Bronchiectasis, a general disease of the bronchi in one or more lobes.

2. Bronchiectatic abscess, a localized suppurative process in the course of a bronchus, and thus far observed only in post-tonsillectomy cases.

3. Suppurative pneumonitis, a diffuse purulent process.

4. Extrabronchial abscess, a localized purulent process.

Also, that certain interesting histological changes have been observed:

1. Metaplasia in bronchial epithelium.
2. Epithelial lining of bronchiectatic abscess and some smaller abscesses of Group 3.
3. Proliferation of smaller bronchioles and air passages resembling proliferation of the bile passages in portal cirrhosis. [E. H. R.]

Acute Perforated Ulcer of the Stomach, or Duodenum.

Stewart, G. D., and Barber, W. H. (*Annals of Surgery*, March, 1922). The report made by these authors is based upon 24 acute perforated ulcers of the stomach and duodenum coming under the department of surgery during the last five years. All were given a chance of operative recovery, and with the single exception of one three-day and one two-day perforations, all survived. The operative procedure in each instance was inversion and drainage with or without plication and omental grafting. Gastro-enterostomy has not to date appeared indicated in the subsequent courses of these patients. The rationale of inversion appears further borne out by a study of the surgical pathology of perforation in the normal stomach. [E. H. R.]

Potential Malignancy in Exstrophy of the Bladder.

Scholl, Albert J. (*Annals of Surgery*, March, 1922), presents an article based on nine cases at the Mayo Clinic and reviews the subject adequately, and makes the following statements in conclusion:

Exstrophied bladders that are subject to constant irritation and trauma have an extensive glandular covering, the result either of metaplasia from the normal covering or of hyperplasia of glands in the mucosa. Such glandular structure often shows characteristics approximating malignancy. In nine cases of exstrophied bladder, in which material for histologic study was available, two were definitely malignant, and two showed atypical cellular formation varying markedly from the normal. In the reported cases of malignancy of exstrophied bladders, which are relatively frequent, the growths were adenocarcinomas. This glandular malignancy is the type that would develop from irritation and hyperplasia of glandular structures. [E. H. R.]

Reaction of the Blood in Relation to Dyspnea.

Fraser, Ross, and Dreyer (*Quarterly Journal of Medicine*, April, 1922), made observations on the hydrogen ion concentration of arterial and venous blood, in health, and in patients suffering from cardiac insufficiency and uremia. They used a modification of the dialysis method of Levy, Rountree, and Marriott.

In healthy subjects they obtained figures for P.H. closely approximating to 7.68, with little variation between arterial and venous blood. In all of seven cases of valvular heart disease with severe decompensation they found an alkalemia (alkalosis), the highest P.H. found being 7.95; there was no relation between the P. H. and the degree of dyspnea. This is in striking contrast to the acidosis frequently found by them and by previous observers in chronic nephritis; their lowest figure was 7.37. In two of their cases of uremia a marked acidosis was found in the absence of dyspnea.

It is evident, therefore, that the reaction of the blood is not the only, nor even the principal factor, in the production of dyspnea. [W. T.]

Syphilis of the Stomach.

McNee, J. W. (*Quarterly Journal of Medicine*, April, 1922), reports a case of gummatous ulceration of the stomach which is unique in that spirochetes were demonstrated in the lesion. The occurrence of gumma in the stomach, while well established by clinical evidence, has been regarded with scepticism by some pathologists. McNee has removed the last doubt by demonstrating the treponema pallidum in large numbers in the lesion.

The chief importance of gastric gumma lies in its close resemblance to carcinoma. All of the reported cases have shown (1) a palpable tumor, (2) cachexia and (3) achlorhydria. The frequency of perforation is noteworthy, and is explained by the extensive necrosis which is met with in the active stages of the process. The histology is similar to that of tertiary lesions elsewhere, the active stages showing large amounts of granulation tissue infiltrated with round cells and with a marked tendency to necrosis, and no signs of arterial disease, while the stage of repair is characterized by the formation of scar tissue and by endarteritis. No giant cells were encountered. A review of the literature is given. [W. T.]

Pathogenesis of Cirrhosis of the Liver.

Chvostek (*Wien. klin. Woch.*, April 27-May 4, 1922), in a continued article, discussing the pathogenesis of cirrhosis of the liver, concludes that this condition occurs only in persons with a connective tissue diathesis, in whom degeneration stigmata are found as tokens of abnormal developmental processes. [R. M. G.]

Urochromogen Excretion in Gynecology.

Klaften (*Wien. klin. Woch.*, May 11, 1922), in an exhaustive chemical and clinical study from Pebam's Gynecology Clinic in Vienna, concludes that there is no specificity of the urochromogen excretion in diseases of women, but that this reaction is of value in chronic and general conditions rather than in acute infections. [R. M. G.]

Arsenic.

Ullmann (*Wien. klin. Woch.*, May 18-25, June 1, 1922), in a continued article, discusses extensively the action of arsenic, arsenic habituation, and arsenic poisoning, with especial reference to the various therapeutic methods of administration. He does not, however, mention the selective toxic effect of arsenic on the optic nerve. [R. M. G.]

Residual Lactation Acini in the Female Breast. —Their Relation to Chronic Cystic Mastitis and Malignant Disease.

McFarland, J. (*Archives of Surgery*, July, 1922), presents a 64-page article on this much-discussed subject. Each page contains an excellent microphotograph of specimens under discussion. The article is of interest and value. The following conclusions are reached:

1. The breasts of young virgins are composed of a stroma of pure fibrillar tissue which shows an increasing mucinoid transformation with increase of

years. Into the stroma, adipose tissue begins to find its way toward middle life, increasing until in old age the stroma is largely fatty. The parenchyma of the virgin breast always contains many canellated ducts. It may be without lobules, may contain only rudimentary lobules, or may contain well developed lobules in rare cases.

2. The mammary lobule develops in response to stimuli that may be either local or general. Pregnancy is its chief source, and it seems to be only under its influence that full lactation hypertrophy is reached. The lobules arise through budding from the ducts as determined by the stimuli. At any stage of development, the disappearance of the stimulus is followed by retrogression or involution of the lobule, whether throughout the breast or locally.

3. The lobules constituting the parenchyma of the breast in different pregnancies are not necessarily the same. There is some reason to suppose that for each pregnancy there is a different crop of lobules.

4. Involution, the atrophy of the no longer needed lobules is a complicated process whose details vary in different individuals, in the different breasts of the same individual, and in different parts of the same breast, according to local and general conditions.

5. One of the most important sources of the modification of involution is retention of secretion. Its effect is in proportion to its extent and distribution, and is without regularity.

6. Its most striking result is the appearance of residual lactation acini.

7. Residual lactation acini are harmless decadent structures having no significance in respect to the subsequent appearance of malignant disease.

8. The accumulated cellular and amorphous débris resulting from involution sometimes obstructs the outlets of the ducts and acini, leading to retention of secretion and exudation of fluid with cyst formation. The cysts may result from dilatation of either the ducts or the residual lactation acini.

9. The cysts may be a size varying from that of a pin-head to a hen's egg, and may be single or multiple, uniformly disseminated, or collected in groups. They usually have smooth walls and clear serous contents.

10. The pressure exerted on the surrounding tissue by the growing cyst gives rise to sensory disturbances that vary in intensity according to the firmness or softness of the stroma. In a breast with stroma largely mucinoid or adipose, they may occasion no symptoms.

11. The cysts are benign and harmless. If they become large their excision may be indicated to make the patient more comfortable.

12. Cancer cysts are not specific entities. They are the result of the accidental coexistence of cysts and cancer in the same breast. Original contiguity followed by increase in the size of each determines final continuity.

13. The so-called chronic cystic mastitis is not inflammatory, and is not a pathologic entity; it is nothing but a result—or, at most, a perversion of involution.

14. It would, therefore, be desirable to abandon the term, and call the condition "cystic disturbance of the breast," or if it seems better to retain one of the older designations, that of Warren—"abnormal involution"—is probably least objectionable. The only difficulty lies in clearly defining when the process of involution can be said to become abnormal, when it is so diversified.

15. The term "adenoma" should be used only when speaking of the encapsulated tumors of the breast. Parenchymatous increases of unencapsulated or diffused form are hypertrophies, and not related to tumors.

16. There is no "cyst adenoma" of Schimmelbusch. The term is objectionable because it makes it appear as though a tumor existed where no tumor is. The appearance on which the name depends is the result of involution to which the name residual lactation acini has here been given, and which can easily be found in one fourth of all breasts that have lactated.

]E. H. R.[

The Proper Treatment of Chronic Malign Diseases of the Superficial Lymph Glands.

Yates, John L. (*Archives of Surgery*, July, 1922), goes into a rather lengthy discussion of this condition and presents an article profusely illustrated with excellent drawings of the very radical technic of complete excision of all of the superficial lymph nodes of the body, *i.e.*, neck, axilla and groin. He believes that the removal of such areas is an advance in the treatment of this disease and presents the following summary:

There are good reasons for the universal dissatisfaction with the results of present methods of treating malign diseases. Failures are partially attributable to late diagnosis and delayed treatment; but they are also due to a concentration of medical activities upon signs and symptoms of disease rather than upon the real factor that determines the outcome—the defensive capacity of the individual.

Progress is impeded at the present time by too great expectation from the searches and researches devoted to the discovery of "cures." A very natural and human desire for a panacea may one day be gratified, but, judging from the past, that day is still remote. Meanwhile the clinicians who are treating patients must make advances with the means at hand if they recognize their responsibilities and their opportunities. There is ample reason to believe that individuals vary in susceptibility to malign diseases and also in susceptibility to their ravages once they are established. Treating malignant diseases has accomplished relatively little. Treating the patient to decrease susceptibility has accomplished a great deal in tuberculosis and can be extended to other malign affections with but one risk—that of benefit.

A logical method might well be made to combine all that is known to be effective in the treatment of disease with all that is known to be beneficial in treating the individual. Such therapy could be called scientific, and no other. If it is to be adopted, we will have to stop drugging ourselves with statistics because scientific treatment can no more be determined by statistics than it can be instituted for them. Figures compiled today upon what seem to be facts, tomorrow have little foundation in fact. Results are proof; and when favorable results are obtainable, figures are no longer manipulated to establish that fact.

In combating disease that can persist throughout a patient's life and probably does so persist, it is manifest folly to speak of surgical cures or cures of any kind. The term "cure" implies permanency, and when used in this way it is doubly harmful. It releases patients from their obligation to take care of themselves and absolves their physicians from their lasting responsibility in what has become preventive therapy. Deaths due to avoidable mistakes in treatment are no less unfortunate whether they occur in ten days or in ten years. [E. H. R.]

(Ed. Note.—This procedure might seem reasonable were it not for the well-known fact that this particular disease under discussion is just as liable to have an extensive involvement of the deeper glands of the body as well as the more accessible superficial ones. Therefore, it is hard to understand how the removal of the superficial lesions should in any way affect the course of the disease.)

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THE SHRINERS' HOSPITALS FOR CRIPPLED CHILDREN.

The Ancient Arabic Order Nobles of the Mystic Shrine, the playground of Masonry, has assumed a most interesting and important medical and social responsibility. This responsibility is the rehabilitation of the needy crippled child. The membership of the order in the United States, Canada and Mexico is very large and is under one jurisdiction. The annual conventions are attended by thousands upon thousands and are marvelous and surprisingly elaborate displays. Partly hidden by their play, a very keen social consciousness has been revealed. They are convinced for the moment that the needy crippled child most merits their help.

To this end they have levied a regular annual assessment upon every member, which produces an income of considerably over a million dollars a year. They have appointed a board of seven trustees, made up of men of large business, political and professional experience, and have given them complete power to expend this large annual income. This board of trustees has decided to build forty 50-bed modern hospitals in those sections of the United States and Canada where the need of service to the crippled child is most acute. The trustees have appointed an advisory board of five orthopaedic surgeons to assist them in working out their medical problems. To this advisory board they have delegated the authority to nominate the chief surgeons of these hospitals. They have agreed to give these chief surgeons generous salaries for half-time work, and almost complete authority over the professional management of these hospitals. They desire to make these hospitals teaching hospitals with every facility for the highest grade of surgical and research work. There is to be no racial or religious distinction as to the type of patients to be admitted.

Four hospitals are at present under active construction, one at St. Louis, whose chief surgeon is to be Dr. Nathaniel Allison, Dean of Washington University Medical School; one at San Francisco, whose chief surgeon is to be Dr. Walter I. Baldwin, head of the Department of Orthopaedic Surgery in the University of California Medical School; one in the Twin Cities of Minneapolis and St. Paul, whose chief surgeon is to be Dr. Wallace H. Cole; and one at Shreveport, La., whose chief surgeon is to be Dr. Guy A. Caldwell. Other hospitals have been authorized in Canada, Virginia, Oregon, Pennsylvania, and the New England States.

This far-reaching endeavor surely offers a great opportunity to orthopaedic surgery, but more important than this, is the stirring fact that a great body of men have accepted a continental responsibility. They have distributed the financial load so that it becomes an insignificant personal burden which, when thus assumed, swells into a splendid grand total. If this fund be wisely administered, there is possibility of great accomplishment. The widespread participation is the secret of its success and the earnest of its permanence. Other foundations may yield for the time being more money, but they lack the broad stimulation for service which this movement has furnished to the members of the order and may well engender among other great groups. We are aware of no more significant charitable movement which has occurred in our national life.

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ACTIVITIES OF THE LIFE EXTENSION INSTITUTE.

The annual report of the Life Extension Institute, Inc., issued by the President as a letter to the Hygiene Reference Board of the Institute, shows a continued increase in the activities of the organization.

Three phases of its work are particularly noteworthy. The Institute has made an effort to secure contracts from Life Insurance Companies for the annual examination of their policy-holders. Seven companies have already entered into such contracts. The Metropolitan Life Insurance Company, in a statistical study of cases examined, found a reduction in mortality of 28 per cent. among the policy-holders, examined by the Institute in 1914 and 1915, and a reduction of 67 per cent. in the mortality of those found to be impaired.

Investigations conducted by members of the Institute have been presented in "Health Building and Life Extension; a discussion of the means by which the Health Span, the Work Span, and the Life Span of Man, can be extended," by Eugene Lyman Fisk. Dr. Fisk has also prepared a volume for the "American Viewpoint" Series, adapted to readers of seventh grade intelligence.

The New York office of the Institute now has a staff of about thirty physicians, whole time and part time, and 120 technicians and lay employes. The Institute has not practiced medicine, but has referred its examinees to their family physicians for treatment, which would represent fees amounting to between five and ten millions of dollars. Plans are nearly completed for turning over as a free gift the common stock of the Institute to several leading universities, so that ultimately the control of the Institute will be in the hands of the trustees of these universities.

NEWS ITEMS.

Worcester North District Medical Society.—By invitation, the first quarterly meeting was held at the Henry Heywood Memorial Hospital, Gardner, July 25, at 4 p. m. The speakers were: Dr. Richard H. Miller of Boston, "Errors in Diagnoses;" ten-minute papers, Dr. J. G. Henry of Winchendon, "Problems of a Country Hospital," and Dr. T. R. Donovan of Fitchburg, "Intraspinal Pressure." After luncheon there was a tour of the hospital.

Dr. Francis Pierce Silva, a well-known physician of Charlestown, died suddenly of heart disease and the effect of the excessive heat in the Haymarket Square subway station, July 13, at the age of 55. Dr. Silva was a graduate of Harvard Medical School in the class of 1893. He was a fellow of the Massachusetts Medical Society, a member of the Charlestown Medical Society and of the Massachusetts Catholic Order of Foresters and the Ancient Order of United Workmen. He is survived by his widow and a daughter.

Joseph Benedict Lyons, M.D., a fellow of the Massachusetts Medical Society, died at his home in Charlestown, July 18, at the age of 51. He was born in Charlestown on November 4, 1870, and was graduated from the Harvard Grammar School in 1885 and from the English High School in 1888. In 1894 he received the degree of M.D. from the Harvard Medical School. For two years he was house surgeon at the Carney Hospital and then started practice in Charlestown. For many years he was president of St. Vincent de Paul Society of St. Mary's Church and was also a member of the Knights of Columbus, Guild of St. Luke, Catholic Alumni Sodality, Charlestown Medical Society, Boston School Physicians' Association, Carney Hospital Alumni Association, Boston City Club, Harvard Alumni Association and the Harvard Club of Boston, and was examining physician of the Boston Consumptives' Hospital. Dr. Lyons served as overseer of the public welfare under Mayor Peters, but resigned on account of ill health. He is survived by his wife and seven children.

Dr. Charles I. Granstein Sentenced.—On July 15 Dr. Charles I. Granstein of Brockton was sentenced to serve a term of from five to seven years in State Prison. About a year ago the Board of Registration in Medicine revoked the registration of Dr. Granstein, the charge preferred being "criminal assault and the performing of a criminal abortion." The court sentence was the result of conviction on the charge of criminal assault. The charge of performing a criminal abortion was placed on file.

Appointment of Dr. William C. Woodward.—Dr. Woodward has been appointed executive secretary of the Bureau of Legal Medicine and Legislation, the body which will be under the control of the Board of Trustees of the American Medical Association. The functions of this bureau are set forth as follows: (1) To keep in touch with federal and state legislation relating to medicine and public health; (2) promptly and intelligently to advise interested state associations and component societies concerning medical legislation and, so far as practicable, to co-operate with them in such proper action as they may take; (3) to study the circumstances under which threatened actions for malpractice arise, with a view to devising methods, if possible, of reducing the frequency of such actions; of rendering defence—or compromise, if that be indicated—more equitable and effective; and of procuring relief and redress in actions inaugurated and carried on without probable cause; (4) to study and advise generally with respect to legal and legislative matters of concern to the science of medicine and to the medical profession.

Congress of Hygiene in 1923.—A Congress of Hygiene will be held in Strassburg, Alsace-Lorraine, France, in the spring of 1923. The congress is being promoted by some of the best people in France, and is being organized directly by Dr. Borrel, professor of hygiene at the University of Strassburg and director of the institute there. Dr. Borrel will be pleased to receive information concerning exhibits, either commercial or otherwise, from physicians, dealers in medical and health supplies, associations and institutions, and other agencies. Those wishing to exhibit at the congress may communicate directly with Dr. Borrel or through the National Tuberculosis Association.

A demonstration clinical meeting was held at the Beverly Hospital, Tuesday, June 18, at 4 p. m. The following interesting cases were shown and discussed:

Epithelioma of lip, schirrous carcinoma of left breast, carcinoma of breast, carcinoma of right breast, question of cholelithiasis, pyelitis, ovarian cyst with twisted pedicle, ruptured appendix with abscess, cholelithiasis, pregnancy, also chronic appendicitis, fractured pelvis, ruptured bladder, contusion of abdominal wall, epiphyseal separation of symphysis pubis, empyema of right chest.

Dr. Caroline Eliza Hastings died July 10, 1922, at the Massachusetts Homœopathic Hospital in her eighty-second year. One of the pioneers among women in her chosen profession, Dr. Hastings had become one of the best known women physicians in Greater Boston. For many years she had lived in retirement in Sharon.

She was born in Barre and received her early education in the public schools of that town, after which she entered Mt. Holyoke Seminary. She received her medical training at the New England Female Medical College, where she was graduated in 1868.

She was for seven years a professor in the Boston University School of Medicine. She had also delivered many lectures on medical subjects.

In addition to practising medicine she had been active in various community interests and served as a member of the Boston School Committee for several years. She was a woman of strong convictions and was ready at all times to defend them, especially so as a member of the textbook committee of the school board. She was an advocate of greater cleanliness in the care of the school buildings and was one of the earliest to urge that luncheons be provided for high school pupils.

She was active in the administration of the affairs of the Talitha Cumi Home, which is now conducted at Forest Hills, and to the interests of which she long had devoted herself.

Worcester District Medical Society.—Announcement has been made of the engagement of Dr. Charles B. Stevens and Mrs. Elena Searle Farnsworth, both of Worcester. The wedding will take place July 31, 1922. Dr. Stevens is one of the leading physicians of Worcester and Chief of the Staff at Belmont Hospital.

Dr. John C. Berry is recovering from a fracture of the lower third of the right fibula.

Dr. Charles A. Sparrow has been elected clerk and treasurer of the Medical Milk Commission of Worcester, in place of Dr. Ray W. Greene, resigned. The commission has secured a moving picture film entitled "A Mother by Proxy," which is being shown in the moving picture theatres of the city as a part of their educational propaganda for "certified milk."

Miscellany.

INSTRUCTIVE DISTRICT NURSING ASSOCIATION.

June the Healthiest Month This Year, Despite Dampness and Heat.

There was a big drop in the number of new patients admitted during the month of June, a drop which had been expected in May, but which did not occur at that time and which makes June the lightest month of the year.

The decrease was principally in the respiratory diseases, there being only 26 new cases of pneumonia, 30 of bronchitis and 40 of other respiratory diseases.

The diseases of the digestive system, which usually increase with the summer months, reversed their custom this year and dropped to fewer than in May, only 89 new cases being admitted.

Communicable Diseases of Childhood.—There were 126 new cases of measles, fewer than those of last month, but an increase over those of last June. There was also a slight increase in chicken-pox and mumps.

Cancer and Diseases of the Heart.—Cancer and diseases of the heart kept up their recent record, new cases of both showing slight increases over those of last month and last year.

Visits.—Despite the fewer new cases, the work was heavier than that in June a year ago, because of the number of cases carried over from last month. There were 25,026 visits made —2281 more than in June, 1921.

Baby and Child Health Follow-Up.—There was a good increase in the well-baby visits, and the follow-up work, for the Child Health Clinic was unusually active.

RED CROSS CEASES WORK IN EUROPE.

The relief operations of the American Red Cross in Europe were officially closed June 30. Thus closes what has been perhaps the most magnificent demonstration of humanitarian effort ever witnessed. Especially in the field of child welfare have American objectives and American methods served the world. The activities involved have given our own workers a broader outlook and better organization. The whole story is one of real achievement.—*The Nation's Health.*

STATE PUBLICITY DIRECTOR EMPLOYED.

Mr. John Ritchie has been employed as part-time publicity director for the Massachusetts Tuberculosis League. In addition to his many other activities in public life Mr. Ritchie was for years Health Commissioner of Boston and later editor of the *American Journal of Public Health*. For the past year Mr. Ritchie has been employed as part-time publicity director for the Boston Tuberculosis Association, which position he continues to hold. Mr. Ritchie will be available to any local association in the state for advice regarding its publicity work.

SUMMER CAMPS.

The Boston Preventorium is now operating with twenty children; Malden has held a carnation sale which netted them $1500 for their summer health camp; and the Hampden County Association is planning to handle 200 children at its Springfield camp this summer.

THE BLIND CHILD.

The National Committee for the Prevention of Blindness has published a summary of state laws and rulings relating to the prevention of blindness due to babies' sore eyes.

Forty-four states require that babies' sore eyes must be reported. The only states which have made no legal requirement, relating to the reporting of babies' sore eyes, are Arizona, Nevada, Texas, and Wyoming. Physicians and midwives, in twenty-four states, are required to use prophylactic "drops" in the eyes of infants at birth. In two states, only physicians are required to follow this procedure. Two states require midwives and attendants to apply the "drops." Twenty-eight states furnish free prophylactic outfits, and educational literature relating to ophthalmia neonatorum is distributed by thirty-five state health departments.

There is a growing demand for teachers for sight-saving classes. To meet this demand a course for such teachers is being given at Columbia University under the direction of Robert B. Irwin of Cleveland. Miss Gertrude Thompson, formerly teacher of the sight-saving class of Worcester, Mass., will conduct some of the exercises.

INFESTED IMMIGRANTS.

Between April and August, 1921, 136,307 immigrants and travellers were examined at the Port of New York. There were 1,410 persons found to be infested with body lice. All were deloused and their luggage sterilized before being permitted to leave the supervision of the health department.

FINANCIAL VALUE OF HEALTH WORK.

The New York City Health Department claims that by its many activities there is secured a saving of $100,000,000 per year or a profit of 2,000 per cent. on the money appropriated for this department.

THE OMISSION OF OPIUM IN TREATING TUBERCULOSIS.

For three years no narcotic drug has been administered to patients in the Chicago Municipal Tuberculosis Sanitarium. More than a thousand patients are treated each year in this institution. It is claimed that the symptoms formerly treated by the use of narcotics can be treated equally well or perhaps better "by non-medicinal therapeutics, such as hot packs, hot baths, massage, fixation, adhesive plasters, dietetics, psychotherapy, heliotherapy, etc."

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Correspondence.

ATTITUDE OF A. M. A. TOWARD THE RED CROSS ENDORSED.

Mr. Editor:

At a meeting of the Franklin District Medical Society held in Greenfield, July 11, it was voted to endorse the stand taken by the American Medical Association in its attitude toward the Red Cross, and also to endorse the article by Dr. Curtis in the Journal for June 29, 1922.

Chas. Moline,
Secretary Franklin District.

OLD NUMBERS OF THE ARCHIVES OF INTERNAL MEDICINE.

Mr. Editor:

I know of an institution which would appreciate old numbers of the *Archives of Internal Medicine*. All of my own I have given to the Harvard Medical School for use as duplicates, and I now learn that there has been a great demand for these by other institutions throughout the country. In seeking for past volumes of this journal, to my horror I learned from one of my friends that he had thrown his old numbers into the waste basket! This prompts me to ask anyone who chances to have old numbers of the *Archives* which he is not using, if he would be willing to part with them for an institution which would utilize them to advantage, and also to call to the attention of physicians in general the desirability of giving *all* old medical books and journals to medical libraries. Dr. Farlow for a long time has sought these for the Boston Medical Library, and at the Harvard Medical School, too, these would be much appreciated. These old volumes, if not directly utilizable by the library, are exchanged with the greatest possible advantage for other periodicals and books.

I hope, therefore, that any of your readers who chance to have old medical books or other matters of medical interest will not forget the Library of the Harvard Medical School as well as the Boston Medical Library.

Very truly yours,
Elliott P. Joslin,
Chairman Committee on Library,
Harvard Medical School.

THE AMERICAN MEDICAL ASSOCIATION OF VIENNA.

June 30, 1922.

Mr. Editor:

The American Medical Association of Vienna wishes to have you announce through the columns of your journal, the restoration of friendly understandings between their organization and the teaching-body of the University of Vienna

A Special Committee, elected by the Association, after a thorough investigation of the charges of discrimination against Americans, which were reported by members of our Association and published in our recent memorandum to your Journal, find that the men who made the accusations of discrimination were either unable or unwilling to substantiate these charges under oath. Further, the courses in question were not so called book courses and consequently were not under the control of the A. M. A. of Vienna.

It is the sentiment of this Association, that the men of the teaching body of the University of Vienna have suffered by this unjust criticism.

We further wish to state, that through the efforts of our Special Committee, working with a like Committee from the teaching-body, sufficient numbers of book courses in English in all branches may be had at prices of from $3.00 to $5.00 per hour for the group, taking such courses.

We are very glad to announce this return of friendly relations between the teaching body and our Association and hope that this communication will be given the same publicity as was given our former memorandum.

JOHN J. GELZ,
B. KAUFMAN,
WM. WILSON.

DIVISION OF MENTAL HYGIENE.

July 15, 1922.

Mr. Editor:

I note on page 36 of our July 6, 1922, issue, over the signature of James S. Stone, Secretary of the Committee on State and National Legislation, that the said Committee reports that *"The plan to establish a Division of Mental Hygiene within the Department* (of Mental Disease) *has been put off."*

This is not correct. A law was passed and signed by Governor Cox and I have the quill with which he signed it, which establishes a Division of Mental Hygiene within the Department of Mental Disease, with a Director whose duties are clearly outlined. It is a most progressive measure and is going to be far reaching in the carrying out of a programme for prevention of mental breakdowns.

This Committee also reports: "The plan to have those indicted for crime of a capital nature or indicted more than once for crime, examined by the Department of Mental Disease to determine their mental condition, was defeated."

This is also not correct, for I also have the quill which signed the above bill on May 20, 1921—and it has been a law for a year, and a most successful law. Wickersham of New York is quoted as saying, "This is one of the most progressive laws passed by any State in years." This year an attempt was made to perfect the reporting by the clerks of the courts of the cases covered by this law, but it was defeated by three votes, as the result of John P. Manning, Clerk of the Superior Court, Suffolk County, circularizing the Legislature at the last moment, objecting to the Probation Officers being directed to report the records of the men to the clerks of the courts. So the law stands as it was originally passed and the duty of reporting lies with the Clerks.

Very truly yours,
L. VERNON BRIGGS, M.D.

P. S.—I enclose a copy of the law on criminals. I am sorry I have not a printed copy of the law establishing a Division of Mental Hygiene, but I will obtain one if you wish it.

[CHAP. 415]

AN ACT PROVIDING FOR AN INVESTIGATION BY THE DEPARTMENT OF MENTAL DISEASES AS TO THE MENTAL CONDITION OF CERTAIN PERSONS HELD FOR TRIAL.

Be it enacted, etc., as follows:

Chapter one hundred and twenty-three of the General Laws is hereby amended by inserting after section one hundred the following new section:—*Section 100A.* Whenever a person is indicted by a grand jury for a capital offense or whenever a person, who is known to have been indicted for any other offense more than once or to have been previously convicted of a felony, is indicted by a grand jury or bound over for trial in the superior court, the clerk of the court in which the indictment is returned, or the clerk of the district court or the trial justice, as the case may be, shall give notice to the department of mental diseases, and the department shall cause such person to be examined with a view to determine his mental condition and the existence of any mental disease or defect which would affect his criminal responsibility. The department shall file a report of its investigation with the clerk of the court in which the trial is to be held, and the report shall be accessible to the court, the district attorney and to the attorney for the accused, and shall be admissible as evidence of the mental condition of the accused. [*Approved May 20, 1921.*

PROMOTIONS AND APPOINTMENTS

The Board of Scientific Directors of the Rockefeller Institute for Medical Research announces the following promotions and appointments:

Dr. Wade H. Brown, hitherto an Associate Member in Pathology and Bacteriology, has been made a member.

Dr. Homer F. Swift, hitherto an Associate Member in the Department of the Hospital, has been made a Member.

Dr. Carl A. L. Binger, hitherto an Assistant in the Department of the Hospital, has been made an Associate.

Dr. Albert H. Ebeling, hitherto an Assistant in Experimental Surgery, has been made an Associate.

Dr. Laura Florence, hitherto an Assistant in the Department of Animal Pathology, has been made an Associate.

Dr. Albert B. Hastings, hitherto an Assistant in the Department of the Hospital, has been made an Associate.

Dr. Philip D. McMaster, hitherto an Assistant in Pathology and Bacteriology, has been made an Associate.

Dr. Louis A. Mikeska, hitherto an Assistant in Chemistry, has been made an Associate.

Dr. Ida P. Rolf, hitherto an Assistant in Chemistry, has been made an Associate.

Mr. Fred A. Taylor, hitherto an Assistant in Chemistry, has been made an Associate.

Dr. Hugh J. Morgan, in the Department of the Hospital, has been appointed Resident Physician at the Hospital.

Dr. David I. Hitchcock, hitherto a Fellow in General Physiology, has been made an Assistant.

Mr. James M. Neill, hitherto a fellow in the Department of the Hospital, has been made an Assistant.

Mr. Henry S. Simms, hitherto a Fellow in chemistry, has been made an Assistant.

The Following new appointments are announced:

Prof. Karl Landsteiner, Member in Pathology and Bacteriology.

Dr. Christen Lundsgaard, Associate in the Department of the Hospital.

Dr. Thomas M. Rivers, Associate in the Department of the Hospital.

Miss Lillian E. Baker, Chemical Assistant in the Division of Experimental Surgery.

Dr. Edmund A. G. Branch, Assistant in the Department of the Hospital.

Dr. George R. Brow, Assistant in Medicine and Assistant Resident in the Hospital.

Dr. Harry W. Dahl, Assistant in Medicine and Assistant Resident in the Hospital.

Dr. Douglas R. Drury, Assistant in Pathology and Bacteriology.

Dr. Geoffry C. Linder, Assistant in Medicine and Assistant Resident in the Hospital.

Dr. Henry A. Murray, Jr., Assistant in the Department of the Hospital.

Mr. Frederic M. Nicholson, Assistant in Pathology and Bacteriology.

Miss Ida W. Pritchett, Assistant in Pathology and Bacteriology.

Dr. Harold A. Salvesen, Assistant in Medicine and Assistant Resident in the Hospital.

Dr. Harold J. Stewart, Assistant in Medicine and Assistant Resident in the Hospital.

Dr. Chester M. Van Allen, Assistant in Pathology and Bacteriology.

Miss Helena A. M. Tibbetts, Fellow in the Department of Animal Pathology.

Dr. Peyton Rous, Member of Pathology and Bacteriology, has been appointed co-editor of the *Journal of Experimental Medicine*.

Dr. Harold L. Amoss, hitherto an Associate Member in Pathology and Bacteriology, has accepted a position as Associate Professor of Medicine at Johns Hopkins Medical School.

Dr. Lloyd D. Felton, hitherto an Associate in Pathology and Bacteriology, has accepted a position as Assistant Professor in Preventive Medicine and Hygiene at the Harvard Medical School.

Dr. Raymond G. Hussey, hitherto an Associate in Bio-Physics, has accepted a position as Assistant Professor in Pathology in Cornell University Medical College.

Dr. Robert L. Levy, hitherto an Associate in the Department of the Hospital, has accepted a position as Associate in Medicine at the College of Physicians and Surgeons, Columbia University, and Assistant Visiting Physician at the Presbyterian Hospital.

Dr. Edgar Stillman, hitherto an Associate in the Department of the Hospital, has accepted a position as Associate in Medicine at the College of Physicians and Surgeons, Columbia University, and Assistant Visiting Physician at the Presbyterian Hospital.

Dr. Goronwy O. Broun, hitherto an Assistant in Pathology and Bacteriology, has accepted a position as Assistant in the Thorndyke Laboratory, Boston, Mass., and Assistant Resident Physician at the Boston City Hospital.

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UNITED STATES CIVIL SERVICE EXAMINATION—MICROSCOPIST.

RECEIPT OF APPLICATIONS TO CLOSE AUGUST 15, 1922.

The United States Civil Service Commission announces an open competitive examination for microscopist. A vacancy in the Public Health Service, for duty at Memphis, Tenn., at $1,500 a year, and vacancies in positions requiring similar qualifications, at this or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Duties.—The duties of the appointee will consist of the preparation and identification of histological material, microscopic slides, and the general duties of an expert technician in a pathological laboratory.

Subjects and weights.—Competitors will not be required to report for examination at any place, but will be rated on the following subjects, which will have the relative weights indicated:

Subjects.	*Weights*
1. Specimen slides (to be filed with application)	50
2. Education, training, and experience	50
Total	100

Applications.—Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Customhouse, Boston, Mass., New York, N. Y., New Orleans, La., Honolulu, Hawaii; Post Office, Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Calif., Denver, Colo.; Old Customhouse, St. Louis, Mo.; Administration Building, Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R.

Applications should be properly executed, excluding the medical certificate, and must be filed with the Civil Service Commission, Washington, D. C., prior to the hour of closing business on August 15, 1922.

GRADUATE NURSE, GRADUATE NURSE (FOLLOW-UP).

Applications will be rated as received until December 30, 1922.

The United States Civil Service Commission announces an open competitive examination for graduate nurse, and graduate nurse (follow-up), for filling vacancies in the United States Veterans Bureau and in the Indian and Public Health Services.

Salary.—*Indian Service.*—The usual entrance salary for this position in the Indian Service is $840 a year, with laundry of uniform, furnished quarters, heat, and light. Meals are furnished at cost. Appointees whose services are satisfactory may also be allowed the increase granted by Congress of $20 a month.

Veterans Bureau and Public Health Service.—In the nursing services of the Veterans Bureau and U. S. Public Health Service the rates of pay are as follows, appointments being made to the lower grades and according to assignment and experience disclosed by the examination; the higher grades are usually filled by promotion:

Hospital Service.	*Veterans Bureau.*	*U. S. Public Health Service.*
Chief nurse	$1,584 a year	$1,344 a year
Assistant chief nurse	1,200 a year	960 a year
Head nurse	1,020 a year	780 a year
Nurse	960 a year	720 a year

In addition, quarters, subsistence, and laundry are furnished; and, in the Public Health Service only (not in the Veterans Bureau) the congressional bonus of $20 a month is allowed.

Nurses assigned to patients having tuberculosis or neuro-psychiatric conditions are allowed increased compensation at the rate of $60 a year.

Follow-up work in district or subdistrict managers' offices, U. S. Veterans Bureau, to be selected from those passing as graduate nurses (Public Health):

Chief nurse, $2,000 a year.
Head nurse, $1,800 a year.
Staff nurse, $1,710 a year.

Nurses having special experience in psychiatry $1,800 to $2,400 a year. These employees do not receive quarters, subsistence, laundry, or the congressional bonus.

Citizenship and sex.—All citizens of the United States who meet the requirements, both men and women, may enter this examination; appointing officers, however, have the legal right to specify the sex desired in requesting certification of eligibles. For the Indian Service women only are desired; for the Veterans Bureau and Public Health Service both men and women are desired.

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BOOKS RECEIVED FOR REVIEW.

The Journal acknowledges the receipt of the following books for review:

Les Maladies Parasitaires des Plantes—Infestation-Infection. Par M. Nicolle et J. Magron. Published by Masson & Cie, Paris. 199 pages. Price 8 francs.

Applied Chemistry—By Fredus N. Peters. Published by C. V. Mosby Co., St Louis, Mo. 461 pages. Price $3.50.

Symptoms of Visceral Disease. 2nd Edition. Francis M. Pottenger. Published by C. V. Mosby Co., St. Louis. 357 pages. Price $5.50.

Studies from The Rockefeller Institute for Medical Research. Reprints—Vol. xli. Privately printed. 642 pages. Price $2.

Blood Transfusion. By Geoffrey Keynes. Oxford Medical Publications. 166 pages. Price $3.

Treatment of Injuries of the Peripheral Spinal Nerves. By Sir Harold J. Stiles and M. F. Forrester-Brown. Oxford Medical Publications. 180 pages. Price $4.30.

Reports of the St. Andrews Institute for Clinical Research. Vol. 1. Oxford Medical Publications. 208 pages Price $3.

Psychoanalysis and the Drama. By Smith Ely Jelliffe and Louise Brink. Published by Nervous and Mental Disease Publishing Co., Washington and New York. 162 pages. Price $3.

Tuberculosis and the Community. By John B. Hawes, 2nd. Published by Lea & Febiger, Phila. and New York. 168 pages. Price $1.75.

Clinical Laboratory Technic for Nurses. Revised Edition. Anna L. Gibson. Published by Whitcomb and Barrows, Boston. 214 pages. Price $2.

X-Ray Dosage in Treatment and Radiography. By William Daniel Witherbee and John Remer. Published by the Macmillan Co., New York. 87 pages. Price $1.75.

Food, Health and Growth By L. Emmett Holt. Published by the Macmillan Co., New York. 273 pages. Price $1.50.

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MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH.

Cases Reported Week Ending July 15, 1922.

Disease	*No. of cases*	*Disease*	*No. of cases*
Anterior poliomyelitis	5	Scarlet fever	45
Chicken-pox	24	Septic sore throat	1
Diphtheria	103	Syphilis	42
Dog-bite requiring anti-rabic treatment	17	Suppurative conjunctivitis	7
German measles	2	Trachoma	1
Gonorrhea	91	Tuberculosis, pulmonary	128
Malaria	2	Tuberculosis, other forms	21
Measles	349	Typhoid	13
Mumps	54	Whooping cough	112
Ophthalmia neonatorum	9		
Pneumonia, lobar	24		

PUBLIC HEALTH LECTURERS FOR THE YEAR 1922.

The Committee on Public Health of the Massachusetts Medical Society has been able during the past three years to arrange with well known specialists in various medical fields to give talks at meetings of the District Medical Societies on subjects of interest and importance to all practitioners. It is a pleasure to announce that a similar arrangement has been made this year and that the gentlemen named below are willing, without expense to the District Society, to give occasional talks of thirty to forty minutes on subjects relating to the promotion of public health, extending opportunity for questions and discussion. It is suggested that medical societies consider meeting at neighboring public institutions, since such meetings have been most successful in the past, particularly at the tuberculosis sanatoria and state hospitals for the insane.

José Penteado Bill, M.D., Doctor of Public Health, Specialty: Preventive Medicine.

Frank C. Dunbar, M.D., Bacteriologist, Instructor in Bacteriology and Pathology, Tufts College Medical School.

Walter E. Fernald, M.D., Superintendent, Massachusetts School for the Feeble-minded.

Timothy Leary, M.D., Professor of Pathology, Tufts College Medical School; Medical Examiner, Suffolk County.

Edwin H. Place, M.D., Physician-in-Chief, South Department, Boston City Hospital. Specialty: Contagious Diseases.

C. Morton Smith, M.D., Chief of Department of Syphilis, Massachusetts General Hospital.

George Gilbert Smith, M.D., Assistant in Department of Genito-Urinary Diseases, Massachusetts General Hospital. Specialty: Genito-Urinary Diseases.

Lesley H. Spooner, M.D., on Staff of Out-Patient Department, Massachusetts General Hospital, Specialty: Specific Diagnosis and Treatment of Pneumonia.

William C. Woodward, M.D., Ex-Health Commissioner, City of Boston.

George H. Wright, D.M.D., Lecturer on Dental Hygiene, Harvard Dental School. Specialty: Dental Surgery.

Thomas F. Kenney, M.D., Director of School Hygiene, City of Worcester. Specialty: Full time School Health Officer.

Secretaries of District Medical Societies writing to ask for these lecturers will kindly designate the topic, the place and the hour of meeting as well as the name of the desired speaker, thus eliminating unnecessary correspondence. Please address communications to the Secretary of the Committee, Annie Lee Hamilton, M.D., 164 Longwood Ave., Boston 17.

[Note: The Committee on Public Health feels that this notice may have escaped attention, for few applications have been received. Each lecturer is an authority and would present his subject in an interesting and instructive manner.]